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THE CHEMIST AND DRUGGIST

ESTABLISHED 1859

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and all sections of the drug, pharmaceutical, fine chemical, cosmetic, and allied industries

Official organ of the Pharmaceutical Society of Ireland and of the Pharmaceutical Society of Northern Ireland

Volume 185 February 12, 1966 No. 4487

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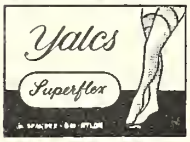

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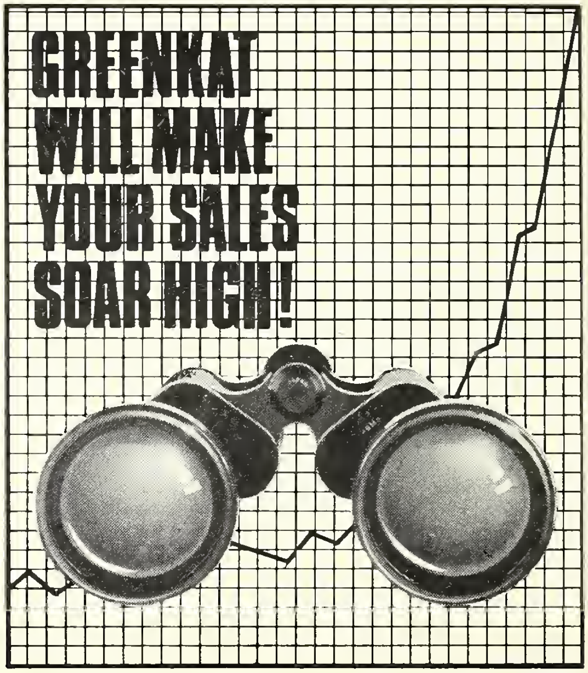
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The CHEMIST AND DRUGGIST

Volume 185 FEBRUARY 12, 1966 No. 4487

Clearance for Cyclamates

"NO RISKS TO HEALTH" IF USED IN FOODS

THE Food Additives and Contaminants Committee has advised the Ministry of Health and the Ministry of Agriculture, Fisheries and Food that there would be no risks to health in allowing the use of cyclamates in food without statutory limitations except for that already laid down in the Soft Drinks Regulations, 1964.

The report on cyclamates (H.M. Stationery Office, price 1s. 3d. includes the findings of the pharmacology subcommittee. It refers to the impressive extent of the information available to support the safety-in-use of cyclamates. The Committee do not recommend any amendment to the ban on the use of artificial sweeteners in ice cream and suggest that any regulations made as a result of the report should be reviewed in five years. The Ministry of Agriculture are seeking comments on proposals for the new regulations on artificial sweeteners in food.

The Ministry state it is not proposed to lay down standards for artificial sweetening powders and artificial sweetening solutions.

Mixed tablets containing both saccharin and cyclamate will be required to contain not less than 1 mg. of saccharin and not less than 15 mg. of cyclamate.

Where available, the specifications and requirements for saccharin and cyclamates in the British Pharmacopœia will be adopted and the same specifications and requirements will be applied by an amendment to the Soft Drinks Regulations, 1964, to saccharin and cyclamates used in soft drinks.

The Ministry are also considering the labelling provisions as respects artificial sweeteners and those who wish to submit any comments on the Food Additives and Contaminants Committee's Report or on the previous proposals for regulations, should send them to the assistant secretary, Food Standards Division, at Ministry of Agriculture, Fisheries and Food, Great Westminster House, Horseferry Road, London, S.W.1, before March 31.

Infant Foods

TERMS OF REFERENCE TO COMMISSION

THE Board of Trade submitted the reference relating to the supply of infant milk foods to the Monopolies Commission on February 8. The terms of the reference have been limited and the Commission are asked to report on whether the distribution policies of not normally making infant milk foods available for sale " in shops other than chemists " operates or may be expected to operate against the public interest. However, the Commission must first ascertain whether monopoly conditions prevail. For that purpose monopoly conditions are defined as:—

(i) where at least one-third of all the goods of a particular description which are supplied in the United Kingdom are supplied by, or to, one firm or a group;

(ii) where the supply of goods, to the extent of at least one-third, is subject to arrangements which prevent or restrict competition (provided that this is not merely by reason of a registrable agreement, which would bring the matter within the scope of the Restrictive Trade Practices Act, 1957).

Infant milk foods are defined as "any combination of nutrients (with or without additives) wholly or partially derived from cows' milk, in powder or liquid form, prepared specifically and primarily for use in the bottle feeding of infants from birth as complete or partial substitutes for natural human milk." Any person or organisation wishing to offer evidence in relation to the reference should write to the secretary, Monopolies Commission, 8 Cornwall Terrace, Regent's Park, London, N.W.1.

Finance for Doctors

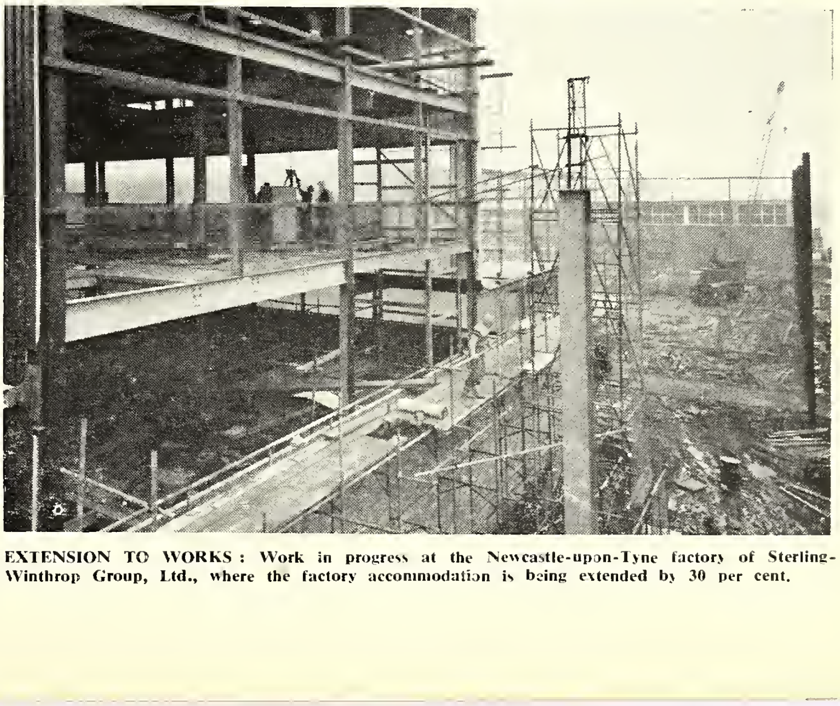
AID IN PURCHASING EQUIPMENT, ETC.

THE General Practice Finance Corporation which the Government propose to set up to assist family doctors to purchase premises and equipment, would have power to borrow up to £10 millions, an amount that the Minister and Secretary of State could increase to £25 millions. That is made clear in the text of the National Health Service Bill, published recently (it does not extend to Northern Ireland). The Bill provides for changes in the methods of payment to N.H.S. doctors so to allow, in certain circumstances, payments by salary. The proposals are the outcome of negotiations between the Minister of Health and the British Medical Association following the " doctors' charter " of 1965. The Corporation will consist of eight members including a chairman and deputy chairman appointed by the Minister in consultation with the profession. Its main functions have been defined as the acquisition of sites or premises; conversion or construction of premises; and the alteration, enlargement, repair or improvement of premises.

Design Council

RANGE OF AWARDS WIDENED

IN 1967 the Council of Industrial Design is widening its range of annual



EXTENSION TO WORKS: Work in progress at the Newcastle-upon-Tyne factory of Sterling-Winthrop Group, Ltd., where the factory accommodation is being extended by 30 per cent.

awards to industry while at the same time discontinuing its Design Centre awards in their present form. New awards, to be known as Council of Industrial Design awards, covering not only durable consumer goods but also extending into the field of engineering equipment and capital goods are being instituted. Separate panels of judges will be appointed for consumer goods and capital goods. Manufacturers of capital goods need to obtain details of, and to apply for, the new awards. Manufacturers of durable consumer products in Design Index need not make special application since all products included in Design Index are eligible. First, categories of capital goods to be considered for the new awards will include industrial machinery of all classes, electrical and electronic equipment, scientific instruments, and others. Further details should be obtained from Mr. W. H. Mayall, Council of Industrial Design, 28 Haymarket, London, S.W.1.

Statutory Committee

TWO CASES ADJOURNED

THE Statutory Committee of the Pharmaceutical Society of Great Britain, at a meeting on February 2, decided to adjourn two cases. In one case, involving a pharmacist aged seventy-eight, the inquiry was held over until the next meeting in order to obtain a medical report as to his condition and a report from the Pharmaceutical Society's inspector. In the other case, in which a company had pleaded guilty to offences under the Pharmacy and Poisons Act, 1933, the committee found unanimously that there had been misconduct by the superintendent pharmacist but decided not to deal with the matter immediately. Discussion was postponed for twelve months, after which time the company and the pharmacist would be required to produce two testimonials, "one in each case," said the chairman, Sir Benjamin Omerod, "from a practising pharmacist as is the usual practice."

Quality Control

WORLD CERTIFICATES UNDER DISCUSSION

THE executive board of the World Health organisation, which met in Geneva recently, has asked the director-general to continue the study of the value and possibility of issuing quality control certificates for pharmaceutical preparations; to increase the number of reference laboratories and the provision of aid for the establishment of quality control laboratories where national or regional facilities are insufficient. The board established official relations with two new non-governmental organisations, the International Epidemiological Association and the International Planned Parenthood Association. The working budget recommended to the World Health Assembly in May was $51·615 millions.

Chemists' Retail Sales

BOARD OF TRADE STATISTICS

THE index of retail sales by chemists and photographic dealers in December 1965 was 182 (average monthly sales in 1961=100), an increase of 6 per cent. over the corresponding month of 1964. Figures recently issued by the Board of Trade also reveal the following indices for the month:—

Independent retailers	148 (+ 3 per cent.)
Multiple retailers	230 (+10 per cent.)
Co-operative societies	173 (+ 2 per cent.)

The figures do not allow for receipts under the National Health Service.

Franco-British Lecturers

FRENCH PROFESSOR VISITS SCOTLAND

WHAT happens to drugs in the body ("Metabolism of Medicaments") is the subject on which Professor Yves Cohen, of the faculty of pharmacy, University of Paris, is to speak at University of Paris, is to speak on at meetings in Aberdeen, Edinburgh and Glasgow on February 15, 16 and 18. Professor Cohen was at one time director of the laboratory for investigating and controlling pharmaceutical products in the French National Centre for Nuclear Studies. In research his speciality is study of the permeability of membranes and the absorption of medicaments, using radio-isotopic labelling techniques. The lectures in Aberdeen and Glasgow are being given in the Schools of Pharmacy. At Edinburgh, Professor Cohen will address an evening meeting of the Scottish Department of the Society. Times at which the lectures take place appear on p. 165.

IRISH NEWS

THE NORTH

West Tyrone

CHEMISTS' ANNUAL DINNER

THE second annual dinner of the Fermanagh and West Tyrone Chemists' Association was held in Omagh on January 26. The Association's principal officer (Mrs. Catherine Slevin, Ph.C., Omagh) presided, and about 130 were present, many of whom had travelled from Belfast. In the ballroom the coloured side lights were supplemented by coloured candles, each fixed in the neck of an old-fashioned green shop-round labelled with the familiar syr. sennæ, syr. zingib, and so on. Around the room and on the tables had been placed symbols of the profession, including two colourful carboys and a pestle and mortar. In her speech, Mrs. Slevin, after welcoming the guests, congratulated Mr. C. S. Ritchie on his appointment as secretary of the Ulster Chemists' Association and assured him of the full support of her members. She then presented a handsome bouquet of flowers to his predecessor Miss A. E. Strachan. Miss Strachan returned thanks. On behalf of the Ulster Chemists' Association Mr. J. K. McGregor (president), said it was a pleasure for members of the executive to visit the local associations. The mother Association was proud of its healthy offspring. He congratulated the co-founders of the Fermanagh and West Tyrone Association (Messrs. T. G. Rutledge and L. C. Magee) on the magnificent and successful work they had done and looked forward to the day when the Association would provide a president of U.C.A. He felt, he said, that that was not far off. On behalf of the guests Mr. N. A. J. Anderson, Portadown, said that members of the Association had a worthy representative on the U.C.A. executive in the person of Mr. L. C. Magee. The remainder of the evening was spent in dancing. During the evening each guest was handed a small gift presented by a cosmetic manufacturer.

IRISH BREVITIES

THE REPUBLIC

THE organising secretaries of Irish Pharmacy Week, 1965, wish to point out that in preparing the list of companies appearing in an announcement in the advertisement pages of THE CHEMIST AND DRUGGIST, February 5, they inadvertently omitted the names of United Drug and Chemical Co., Ltd., and Geigy Pharmaceutical Co., Ltd. The committee thanks those two companies for donations received.

COMPANIES BILL

Reports and accounts to give more information

MUCH more detailed information than is at present shown by companies in their reports and accounts; is required by the Companies Bill published on February 3. In addition the information must be filed with the Registrar of Companies by all limited companies, since the Bill abolishes the status of "private exempt companies."

Among the figures and information which a company must give are the following:—Turnover, including a breakdown for different classes of business; export sales (except for companies with a turnover of yearly £20,000 or less); the chairman's emoluments and an indication within £2,500 of the emoluments of the other directors; names of principal subsidiaries, or of the parent company; information about trade investments to the same extent as about other investments; particulars of any company in which more than one-tenth of any class of shares is held, and of any holding accounting for more than 10 per cent. of assets; a record of turnover, profit before and after tax, shares in issue and reserves for the previous four years, and particulars of how assets are valued. Political contributions must be stated.

The Bill also raises the cost of registering a company and keeping it alive. The registration fee goes up by £18, and the fee for registering a copy of documents compulsorily filed with the Registrar to £3.

For the first time a procedure for limited companies to re-register as unlimited companies is provided for, enabling an escape from the new obligations imposed by the Bill. It will permit those who wish to make the change—mainly very small companies—to do so without having to be wound up. Companies that are subsidiaries of limited companies will not be allowed to transform themselves in that way.

The Companies Bill is published by H.M. Stationery Office, price 4s. 6d.

SCOTTISH NEWS

Hospital Pharmacists

SECOND CONFERENCE IN DUNBLANE

THE second conference of Scottish hospital pharmacists is being held at Dunblane Hydro hotel, March 4-6. The cost will be £7 15s. per person and the programme that has been arranged is as follows:—

Friday, March 4
7.30 p.m. Assembly for dinner. Welcome by conference chairman (Dr. J. Killoch Anderson, medical superintendent, Royal Infirmary, Glasgow).

Saturday, March 5
Morning. Opening address by Dr. J. F. H. Brotherston (chief medical officer, Scottish Home and Health Department).
Address: "The Place of the Hospital Pharmacist at Ward Level." Dr. Crooks and Graham Calder (Royal Infirmary, Aberdeen).
Group discussion.
Luncheon
Afternoon address: "Intensive Therapy." Dr. Donald Campbell.
Address: "The Significance of Recent Trends in Formulation in Relation to Changing Concepts of the Stability and Quality of Medicines." Geoffrey Smith (Department of Pharmaceutical Sciences, Pharmaceutical Society of Great Britain, Edinburgh).
Group discussion
Conference Dinner

Sunday, March 6
Address: "Responsibilities of the Hospital Pharmacist for Dispensed Medicines. Charles C. Stevens (Imperial Chemical Industries, Ltd., and chairman of Macclesfield Group Hospital Management Committee).
Group discussion.
Luncheon

Those who wish to attend should apply to Miss Jean E. Fleming, chief pharmacist, Ayrshire Central hospital, Irvine, Ayrs.

NEWS IN BRIEF

In preparation for the presentation of the "Medicines—With Care" exhibition at Plymouth in June, Mr. A. G. M. Madge contributed an article "Use Medicines With Care" (close on thirty-six column inches) to the February 3 edition of the *Western Morning News*.

Port Sunlight, Ches, has been designated a "place of architectural and historical interest." The village was built by Lever Bros., Ltd., for employees at their soap factory after the business had been transferred from Warrington, Lancs, by William Hesketh Lever in 1888.

A campaign to eradicate poliomyelitis in Uganda has begun with the arrival in Kampala of 250,000 doses of British oral polio vaccine developed by the Wellcome Research Laboratories. Half the cost of the scheme is being raised by public appeal in Uganda and the other in the United Kingdom with the help of the National Fund for Research into Poliomyelitis.

Nearly 39,000 pensions totalling almost £7 millions a year were being paid at the second valuation date in accordance with the National Health Service superannuation scheme, states the Government actuary in his recent report (H.M. Stationery Office, price 1s. 9d.). The number had trebled since 1957 and would continue to grow rapidly for many years.

TOPICAL REFLECTIONS

By Xrayser

Distribution of medicines

Your correspondence columns last week reflected the wide indignation in pharmacy aroused by the decision of the manufacturers of a proprietary medicine to change their marketing methods. The medicine in question—I decline to name it, for it does not need advertising in this column—has, until now, reached the public through the agency of the pharmacist. In announcing the widest possible distribution of their wares, through grocers and stores, the manufacturers have advanced what may be regarded as perfectly sound commercial reasons for the change of policy. It is evident from their statement that, in their view, they are missing a market that is being successfully exploited by their "major competitors." But while the decision may be defended on commercial grounds, it is more difficult to find justification for the action in a professional sense, unless we are to assume that the manufacturers feel they are acting as public benefactors in their efforts to secure the widest possible distribution of a product which may be used to treat bites, boils, bruises, burns, catarrh, chilblains, colds, cold sores, cuts, eczema, eyes, feet, gums, heat and nettle rashes, influenza; prevention of, mouth ulcers, piles (haemorrhoids), pruritus (itching), sore throat, spots and pimples, sunburn and teeth (after extraction). One might have imagined that a company associated with the Pfizer Group would have recognised that medicines are not ordinary articles of commerce. The incident is only one of many of a like nature in the experience of the pharmacist, whose qualification has frequently been exploited by his lending his professional cachet to medicines by the mere fact that he stocks and sells them. But the outburst of indignation must stem from the right motives which should, in every case, be governed by the professional and not the commercial sense. The pharmacist, by his specialised training and knowledge, knows what he is selling, and it is in that respect that he differs from those who sell antiseptics as they sell cornflakes, or detergents, or meat-pies. He is in a position to discriminate.

Discrimination

It may be remarked, when the enthusiastic salesman is introducing a new product, that he considers the strongest card in the pack is to give the fullest information on the subject of his company's sales policy in regard to advertising. Press and television "coverage" is detailed at length. The product may be, either as a matter of policy or by law, confined to the pharmacist. But if the pharmacist, at that point, allows himself to be influenced solely by the advertising programme, perhaps allied to the additional inducement of a substantial bonus, he is in no way different from the supermarket across the street. He must be concerned with the nature of the substance he is being pressed to buy and, later, to sell. He can read a formula. He can assess if the claims made seem, to the trained mind, to be excessive. He can decide if the substance is one that his conscience and his knowledge tell him he may sell without loss of personal professional dignity. Such questions are important, and will be still more vital when legislation eventually confines the sale of medicines to the pharmacy. Let there be no doubt that a long and hard fight will be necessary to bring that into being, for there are powerful and strongly entrenched vested interests.

Wrong decision

Meanwhile those who feel outraged by the action of the company concerned will make their own decisions as to the steps they take to show their displeasure. The correspondence on the subject gives some indication of what those steps may be. But the important thing is that what has hitherto been regarded as a medicinal substance is now no longer thought to be in need of the prestige attaching from its distribution through pharmacy. The decision, on grounds of public advantage, is difficult to understand. It remains to be seen if the commercial gain will compensate for the loss of goodwill.

Motions for Branch Representatives

MATTERS TO BE CONSIDERED AT THE MEETING IN MAY

THE following motions are being included in the agenda of the Pharmaceutical Society's Branch Representatives' meeting on May 19.

ABERDEEN and LEEDS

1. That it is the opinion of this meeting that the Council of the Society should examine the present state of proprietary medicines advertising in various media and report upon such steps as may be necessary to bring about the observance of appropriate standards.

ABERDEEN

2. That it is the opinion of this meeting that the Pharmaceutical Society, in conjunction with the Association of the British Pharmaceutical Industry, should endeavour to bring about a standardisation of tablet packs.

3. That it is the opinion of this meeting that the Council should consider granting a locum fee to members attending a Branch Representatives' Meeting.

BEDFORDSHIRE

4. That it is the opinion of this meeting that, in any scheme for development of the functions of the Society's Branches, special attention should be paid to the assumption by Branches of responsibility for professional conduct in their membership, and for relations in their area between pharmacy and the public.

BIRMINGHAM

5. That it is the opinion of this meeting that the Council of the Pharmaceutical Society of Great Britain should investigate the possibility of changing the title of " Inspector " to that of " Regional Pharmaceutical Officer."

BOURNEMOUTH

6. That it is the opinion of this meeting that any move toward a dual standard of qualification, one for retail and another for industry, teaching and research, is to be deprecated, and calls on the Council to resist any such move.

COVENTRY

7. That it is the opinion of this meeting that the Society should now produce evidence of its determination to obtain legislation restricting the sale of all medicines to pharmacies.

FIFE

8. That it is the opinion of this meeting that the Council is to be congratulated on the " Medicines—with Care " Exhibition, and recommends the establishment of a small mobile exhibition, to be used by branches at the local level.

GLASGOW

9. That it is the opinion of this meeting that the Pharmaceutical Society should institute a form of student membership suitable for the degree student.

LEEDS

10. That it is the opinion of this meeting that, when drugs are made available to the medical profession, after undergoing the necessary trials, the pure substance contained therein should be available to pharmacists in hospital and general practice, together with information on their solubility and stability in various appropriate solvents.

11. That it is the opinion of this meeting that the co-operation between the Society and the National Pharmaceutical Union in making representations to the Ministry of Health in regard to dispensing by doctors is to be welcomed.

MID GLAMORGAN

12. That it is the opinion of this meeting that the *Pharmaceutical Journal* should publish a series of articles which will assist the pharmacist in general practice in organising his business methods.

NORTH STAFFORDSHIRE and SOUTHAMPTON

13. That it is the opinion of this meeting that the Council should endeavour to secure by all appropriate means compliance by pharmacists and corporate bodies with the Society's recommended method for pricing private prescriptions.

NORTH STAFFORDSHIRE

14. That it is the opinion of this meeting that, to enable the British Pharmaceutical Conference to visit more localities, representations be made to the Executive Committee that this function be reorganised by:—(a) relieving the Branch concerned of any financial anxiety or risk; (b) the appointment of a permanent official to assist with and advise on the necessary arrangements.

15. That it is the opinion of this meeting that owing to the volume of ethical preparations and an increasing complexity of incompatibilities and side reactions, the Society should consider a scheme for issuing and keeping up-to-date information dealing specifically with this problem.

RHYL

16. That it is the opinion of this meeting that the 1s. 0d. increase in the branch capitation fee is insufficient to meet increases in local expenditure and should be increased.

17. That it is the opinion of this meeting that the format of the *Pharmaceutical Journal* should be changed so that the classified advertisements are not given the present place of prominence.

18. That it is the opinion of this meeting that the Pharmaceutical Society should confer with the appropriate body of the medical profession to ensure that all prescriptions (including the name and address of the patient), be clearly and accurately written.

SHEFFIELD

19. That it is the opinion of this meeting that the Society should investigate the possibilities of giving lectures to the general public on subjects beneficial to the prestige of pharmacy.

20. That it is the opinion of this meeting that the Council of the Society in its endeavour to maintain the dignity of the profession, should prohibit " authorised sellers of poisons " from all external advertising to the general public.

SWANSEA

21. That it is the opinion of this meeting that Wales should be accorded the privilege of a Welsh Office of the Pharmaceutical Society.

THE COUNCIL OF THE SOCIETY

22. That it is the opinion of this meeting that the planned distribution of pharmacies is desirable and that legislation should provide for its implementation.

MENTAL ILLNESS

An annual cost to the National Health Service of £140 millions

MENTAL illness now costs the National Health Service more than £140 millions a year, about one-eighth of the total cost of the Service. Working days lost through mental illness in 1963-64 numbered over 32 millions, at a cost to the insurance funds of a further £21 millions. For every employed female just over two, and for every male just over one, working days are lost each year because of mental illness. Those facts are given in the latest Office of Health Economics report, "Progress in Mental Health" (price 7s. 6d.). In a foreword, Lord Balniel (chairman of the National Association for Mental Health) estimates that one in every nine girls now aged six will enter a mental hospital at some time in her life; and one among every fourteen six-year-old boys. Lord Balniel warns, however, against overlooking the recent great strides forward in treating mental illness.

In one section of the report, Mr. H. Gwynne Jones (senior lecturer in psychology, St. George's Hospital Medical School), points out that neuroses, anxiety conditions and personality disorders are responsible for the loss of 17 million working days a year, though he suggests that there is only a narrow distinction between normal behaviour and neurotic behaviour. For most people the anxieties and little irrationalities of behaviour are normal; for the neurotic patient they are so big as no longer to allow him to live or work effectively.

Dealing with the more serious psychoses, Dr. Hugh Freeman (consultant psychiatrist, Salford Royal Hospital) points out that they are responsible for more than a third of all hospital admissions, and that schizophrenia alone is estimated to affect 1 per cent. of the population. He recalls the progress made by using shock treatment from the 1930's onwards. The report itself points out that, after 1954—the year which saw the introduction of the tranquillisers, the number of in-patients in mental hospitals fell from 148,000 to 135,000 within a period of six years.

The 190,000 or so mentally ill patients in mental hospitals and in general hospitals cost the National Health Service £114 millions a year—almost 90 per cent. of which goes on nursing and domestic expenses. The much lower cost of treating the mentally ill as out-patients is highlighted by the fact that the 350,000 or so cared for by their general practitioners cost the N.H.S. only £29 millions. " This is made up of £12 millions to the local authorities, £10 millions on pharmaceuticals, £5 millions to the general practitioners and £2 millions on out-patient consultations." The report also shows that the number of mental patients cared for by the local authorities rose from 122,000 in 1961 to 156,000 in 1964.

The Office of Health Economics points out that publication of the report coincides with the 150th anniversary of the summary dismissal of John Haslam as apothecary of Bethlem Hospital ("Bedlam") in February 1816. His dismissal followed a public and parliamentary outcry against the methods of physical restraint that had been imposed on the inmates of Bedlam. One patient whom Haslam described as "the most malignant and the most mischievous lunatic I ever saw in my life," is reported to have spent the nine years before his death in a special restraining apparatus with chains attached to both his ankles and shoulders. Others were said to have been chained naked to the walls. Despite Haslam's disgrace he was later described as one of the most successful practitioners and able writers of his time on the subject of "madness."

IN PARLIAMENT

By a Member of the Press Gallery, House of Commons

THE Health Ministers have laid before Parliament regulations varying the addition to the fees paid to general dental practitioners to give effect to the review body's recommendation that dentists should be receiving an average net income of £2,950 per year. The effect of the regulations is that, from February 5, a 5 per cent. addition to the scale of fees will be paid instead of the existing 2·7 per cent. in respect of cases of dental treatment begun on or after January 1.

Zirconium

MR. JOHN RANKIN asked the Secretary of State for Scotland what research he was conducting into the value of zirconium as a preventive of dental decay in children. MR. WILLIAM ROSS (Secretary of State for Scotland), in a written answer on February 2, indicated he was not conducting any research. He understood that work on the substance in the United States was still at a preliminary stage and that no scientific evidence had yet been published.

National Health Service Bill

MR. KENNETH ROBINSON (Minister of Health) moved the second reading of the National Health Service Bill on February 3. He referred to ways in which the Government had helped the general practitioner in his work by the free issue of disposable syringes and needles; the campaign to seek the co-operation of the public in making the best use of family doctors' time, the introduction of Exchequer grants of one-third of the cost of approved projects for improving medical practice premises and the subject matter of the Bill. DR. DAVID KERR personally welcomed the Bill. He said the medical profession was faced with the same difficulties as those concerning the small shopkeeper "when the High Street suddenly acquired an enormous land value that could be met only by the supermarkets." He emphasised the need for much bigger types of organisation than existed under the present system of family doctors. He also wanted to know if it was too late to insert in the Bill a reference to the needs of the general dental practice. When MR. REGINALD FREESON said the same point might be made in respect of the ophthalmic practitioners DR. KERR accepted the suggestion, saying it was worth looking at and that the principle could also be extended to the small chemist. The danger, however, was the Corporation established by the Bill might turn out to be an instrument for perpetuating the "small shopkeeper principle" throughout the Health Service instead of having the effect of doing away with it.

Tetracycline Royalties

MR. H. J. H. PARKER asked the Chancellor of the Exchequer on February 1, for each of the three years ended December 31, 1965, how much foreign exchange had been allocated to patentees and licensees engaged in the manufacture of the drug tetracycline to overseas concerns by way of royalty or licensing fees or any other fees or payments. MR. J. DIAMOND (chief secretary) replied that the information was not available.

"Hall" Dispensers' Salaries

MR. BRIAN HARRISON asked the Minister of Health about the salary claim of the Apothecaries' Hall Dispensers Association. MR. ROBINSON in a written answer on February 7 said a claim was made in August 1965. The study was complete and the Whitley Council was to meet on February 17. The numbers of Apothecaries' Hall dispensers were increasingly annually.

COMPANY NEWS

Previous year's figures in parentheses

ILFORD, LTD.—Lord Rockley has relinquished the deputy chairmanship and resigned from the board.

PAINES & BYRNE, LTD.—Messrs. F. P. Diggins and G. Owen have been appointed executive directors.

REICHOLD CHEMICALS, LTD.—Second interim dividend of 6 per cent. making 11½ per cent. to date is announced.

RECKITT & COLMAN HOLDINGS, LTD.—Second interim dividend of 7 per cent. making 14 per cent. to date is announced.

ALBRO FILLERS & ENGINEERING CO., LTD.—Mr. L. H. Broadhurst (technical manager) has now been appointed to the board.

DIXOR, LTD.—Dividend for 1965 is 20 per cent. (12½ per cent.). Profit is £15,979 (£12,515) before depreciation of £1,215 (£955) and tax, £5,857 (£6,752).

UNION CARBIDE CORPORATION (U.S.A.)—Sales in 1965 were a record at £714,285,714, a rise of 10 per cent. on 1964; net income rose by 20 per cent. to reach £81,041,786.

TIMOTHY WHITES & TAYLORS, LTD.—A second interim dividend of 3 per cent. for the year ended January 15 is declared. The final dividend, due in May, may be adjusted.

R. SUMNER & CO., LTD. — Mr. B. G. Cross, B.Sc., M.P.S., has been appointed a director with responsibility for the development and co-ordination of sales and production. Mr. A. T. Lewis, M.P.S., has been appointed sales manager.

HICKSON & WELCH (HOLDINGS), LTD.—Group profit for year ended September 30, 1965, after charging depreciation of £286,969 (£261,505) was £1,374,306 (£1,122,670); taxation,

EXECUTIVE DIRECTORS: One of the first meetings of the executive directors of Vestric, Ltd., with their regional directors was held at Ilkley, Yorks, recently. Left to right, Messrs G. Tasker (Western region), R. W. Freeman (London region), J. Wilkinson (North-eastern region), E. E. Stenett (Southern region (deputy), W. A. Kinnear (managing director), S. M. Lennox (deputy managing director), G. A. Wilson (Midland region), J. S. Cuthbert (Scottish region), B. Sparling (North-western region), K. M. N. Fergusson (finance director) and H. J. Street (marketing director).

£501,036 (£533,252); and net profit attributable to holding company, £834,845 (£589,418).

LAPORTE INDUSTRIES, LTD.—A second interim dividend of 4 per cent. is to be paid in respect of the year ending March 31, making 7 per cent. to date. Payment is designed to obtain for the company the benefit of the transitional tax provisions of the Finance Act, 1965, and does not imply any increase in the total dividend for the year which last year amounted to 11½ per cent.

GILLETTE CO., U.S.A.—Net earnings for 1965 are expected to be about $42,330,000 ($37,673,000). Pre-tax income improved only moderately over the level of the previous year due largely to the expenses of introducing new products which were particularly heavy in the last quarter. The lower overall effective tax rate applicable to the company's earnings was a significant factor in the improvement of net earnings after tax.

BUSINESS CHANGES

MR. J. E. LEPPARD, M.P.S., has opened a pharmacy at 72 Storrington Way, Werrington, Peterborough, Northants.

Appointments

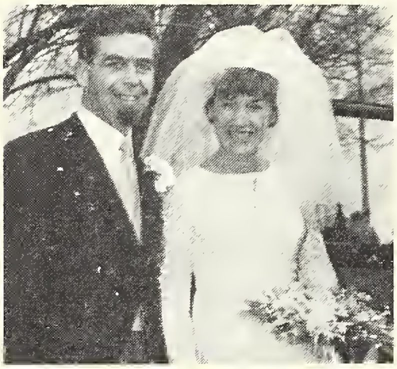
GILLETTE SAFETY RAZOR CO., Isleworth, Middlesex, have appointed Mr. G. Creagh general sales manager.

W. J. BUSH & CO., LTD., Ash Grove, London, E.8, announce changes in the structure of their sales organisation as follows:— Three trade and United Kingdom sales managers have been appointed: Messrs. A. J. Iveson (for chemicals and perfumery); R. G. Sanderson (food), and W. G. Oakley (beverage and ice cream). There are now five product marketing managers: Messrs. S. J. McIntyre (essences, colours, etc.); A. E. Harvey (soft drink compounds and fruit juices); S. G. Harding (essential oils); and R. C. Kitching (chemicals); C. F. Fisher (perfumery compounds). Mr. G. Buckingham becomes home sales field manager. All the foregoing are responsible to the general sales manager (Mr. E. A. F Bolton).

RUSSIAN SCIENTIST at RESEARCH LABORATORY: Dr. Igor Torgov (head of the laboratory of the chemistry of steroids, Institute of the Chemistry of Natural Products of the Academy of Sciences of the U.S.S.R.) visited the research laboratories of The British Drug Houses, Ltd., on January 24. He is seen watching an oxidation process. Also in the picture are research chemist Dr. Renate Coombs, Dr. O. Stephenson (manager of chemical research) and Miss Anne Mahoney, also a research chemist.

MARRIAGES

TAPSTER — MAXWELL - HOLROYD.—At Christ Church, Gravesend, Kent, on January 8, John V. Tapster, M.P.S., Watford, Herts, to Janet Maxwell-Holroyd, Gravesend.



DEATHS

CAIRNS.—On January 20, Mr. Samuel Cairns, M.P.S., c/o 1 Lynedoch Place, Drumsheugh, Edinburgh, 3. Mr. Cairns qualified in 1920.

DEENY.—On January 25, Mr. Peter Gerard Deeny, M.P.S., 57 Main Street, Rutherglen, Glasgow, Lanarks. Mr. Deeny qualified in 1957.

FAWCETT. — On January 20, Mr. William Henry Fawcett, M.P.S., 48 Laburnum Gardens, Monkton, Jarrow, co. Durham. Mr. Fawcett qualified in 1926 and retired in 1965.

GREEN.—On February 1, Mr. Leslie Herbert Arthur Green, M.P.S., 26 Kimberley Road, Nuthall, Notts, aged seventy. Mr. Green qualified in 1921. After a short period in a pharmacy at Wallasey, Ches, he joined his father, the late Herbert Green, M.P.S., in the family business established in Kimberley, Notts, about 1890. He took over on his father's death in 1938 and continued until his retirement in December 1964, when the business was acquired by K. Turner, Chemists (Nottingham), Ltd. Mr. Green is survived by his widow and one son.

HAMNETT. — On January 24, Mr. John William Hamnett, M.P.S., 46 Derby Lane, Old Swan, Liverpool, 13. Mr. Hamnett qualified in 1904.

HATFIELD.—On December 24, 1965, Mr. Harry Hatfield, M.P.S., 3 Brunswick Place, Douglas, Isle of Man. Mr. Hatfield qualified in 1932.

HAYNE.—On January 27, Lynham Randall Hayne, M.P.S., 81 Overhill, Southwick, Sussex. Mr. Hayne qualified in 1910.

JONES.—On February 5, Mr. James Allen Jones, M.P.S., 21 Moor Lane, Great Crosby, Liverpool, 25, aged seventy-two. Mr. Jones qualified in 1916. He founded the company J. Allen Jones, Ltd., and was its chairman and managing director. Active in local politics, Mr. Jones was mayor of Crosby, 1946–47 and deputy mayor, 1947–49.

KIRKHAM.—On February 5, Mr. T. H. Kirkham, chairman, Thames Board Mills, Ltd., Purfleet, Essex, aged fifty-six. Mr. Kirkham had been chairman of the company since 1964 and was previously managing director.

LINTON.—On February 3, Mr. Ernest Linton, J.P., Lynmount, Fullerton Road, Newry, co. Down, Northern Ireland, aged seventy-four. Mr. Linton qualified M.P.S.N.I., in 1926. Until his retirement some years ago Mr. Linton was the superintendent of Connor & Sons, Ltd., 77 Hill Street, Newry, co. Down. He was a member of the Newry Agricultural Society, an officer of the South Down Wild Fowl Preservation Society and a prominent Freemason. In politics Mr. Linton was a staunch Unionist and an active member of the Orange Order. He is survived by his wife and one son.

POMFRET.—On January 22, Mr. William Pomfret, M.P.S., 17 Haston Lee Avenue, Blackburn, Lancs. Mr. Pomfret qualified in 1921.

SIMPSON. — On January 23, Miss Margaret Simpson, M.P.S., Towiemore, 5 Rose Garth Avenue, Aston, Sheffield, Yorks. Miss Simpson qualified in 1923.

SIMPSON.—On January 23, Mr. Albert Edward George Simpson, M.P.S., 38 Eastfield Avenue, Monkseaton, Whitley Bay, Northumberland. Mr. Simpson qualified in 1925.

STOTT. — On November 19, 1965, Mr. George Alexander Stott, M.P.S., c/o Brooklands Farm Hotel (G. House), Holyhead Road, Coventry, Warwicks. Mr. Stott qualified in 1936.

THURSTANS.—Recently, Mr. Reginald Bernard Thurstans, M.P.S., Fairview Farm, Burn, nr. Selby, Yorks. Mr. Thurstans qualified in 1908.

TOMLINSON.—On January 16, Mr. James Tomlinson, M.P.S., 63 Oxford Road, Burnley, Lancs. Mr. Tomlinson qualified in 1927.

TOWLE. — On January 19, Mr. Robert Towle, M.P.S., No. 5 Flat, Old Cleeve House, Old Cleeve, Minehead, Somerset. Mr. Towle qualified in 1914.

WATSON. — On January 17, Mr. Harold Edwin Watson, M.P.S., 1236 Pershore Road, Stirchley, Birmingham, 30. Mr. Watson qualified in 1929.

WITCHELL.—Recently, Mr. Robert Williams Witchell, M.P.S., 39 Forest Road, Worthing, Sussex. Mr. Witchell qualified in 1904.

N.H.S. STATISTICS

In BERKSHIRE 120,033 prescriptions (84,417 forms) were dispensed in October 1965 at a total cost of £69,633. Average total cost per prescription 139·23d.

In BURNLEY during October 1965 contractors dispensed 45,970 prescriptions (30,804 forms). The total cost was £24,946 or 130·24d. per prescription.

Contractors in GREAT YARMOUTH during October 1965 dispensed 25,008 prescriptions (16,154 forms). Total cost was £15,315 an average total cost per prescription of 146·98d.

In SOUTH EAST LONDON AND KENT during October 1965, 704,149 prescriptions (471,934 forms) were dispensed at a total cost of £373.234. Average cost per prescription, 127·21d.

NEW PRODUCTS AND PACKS

PHARMACEUTICAL SPECIALITIES

For Treating Intestinal Infections.—E. R. Squibb & Sons, Ltd., Regal House, Twickenham, Middlesex, are introducing on February 14, a new speciality, Quixalin suspension for the treatment of intestinal infections. Quixalin suspension contains 125 mgm. of Halquinol per 5 mils. It is understood to exhibit a wide range of activity against enteropathogens, and its antimicrobial spectrum includes bacteria, fungi and amœbæ. It is thus indicated for the treatment of bacterial, amœbic and non-specific diarrhœas. The suspension may be administered to adults and children of all ages, and a chart of recommended dosages is included in the package insert. The pack is a bottle of 120 mils with 5-mil teaspoon.

PRODUCTS FOR BABIES

A Cream and a Talc.—Crookes Laboratories, Ltd., Basingstoke, Hants, have entered both home and export baby-products markets with a Lactocalamine cream and talc. The talc is issued in an unbreakable 80-gm. polythene puffer pack in white, blue and black and the cream in white polystyrene jar of 110 gm. The sterilised talc, claimed the finest milled product available, includes the bactericide hexachlorophene, which is also a constituent of the cream. Because of the presence in the cream of alkyl branched fatty acid esters, which act in the same way, it is stated, as the secretions from the duck's preen glands (which cause moisture to run off the duck's back), moisture cannot irritate the skin yet the natural evaporation of moisture through the skin is not hindered. Both products contain lanolin. Display material is available.

VETERINARY SPECIALITIES

Vaccine Against Canine Distemper.—Stevenson, Turner & Boyce, Ltd., 30 South Street, Reading, Berks, have launched a new veterinary speciality, D-Vac-M (measles vaccine), distributed in the United Kingdom under the name Stavax-M, that is understood to induce early resistance to canine distemper.

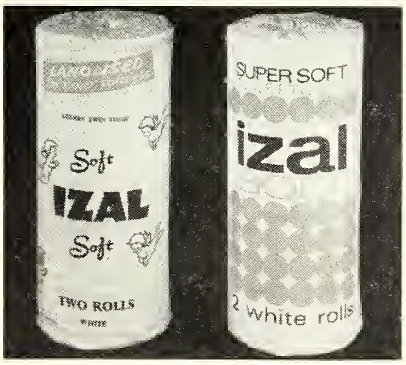
Vaccine Against Newcastle Disease. What is claimed the first combined Newcastle disease and infectious-bronchitis vaccine to be effective at a dose of 0·5 mil has been introduced under the name Nebrovax by Burroughs Wellcome & Co., 183 Euston Road, London, N.W.1. Prepared for the active immunisation of fowls, the product has been developed at the Wellcome Research Laboratories. It is an inactivated vaccine prepared from British field strains of the causative viruses. By its introduction the poultry farmer is offered not only a convenient dose size but also a time- and labour-saving method of protecting flocks against two major economic threats. Nebrovax is available in packs of 50 and 250 mils.

A New Treatment for Calf Scours.—A new and simplified approach to the treatment of calves for scours is being marketed by Smith Kline & French agricultural division, Welwyn Garden City, Herts. Based on a device already widely used for the treatment of piglets, the new product is a high density polythene container with a pump and tube that delivers an accurately measured dose of medicine on to the back of the calf's tongue. The treatment is easily administered by the stockman. The Neftin calf doser, as it is called contains a suspension of furazolidone, 75 mgm. per mil, and holds approximately sixty-six measured doses. Three dosage rates are recommended:—Two doses per day for calves of 75-110 lb. live weight; three for calves of 110-165 lb.; and four doses for calves of 165-200 lb.

SUNDRIES

Babies Lulled to Sleep.—The American Slumber Tone device for lulling fretful babies to sleep is available from the sole importers, Wm. Foster (Rainford), Ltd., Rainford, St. Helens, Lancs. It is effective with babies up to six months old.

Breath-meter. — Cotswold Chemical Co., Ltd., 41 Rodney Road, Cheltenham, Gloucs, are marketing through Surgical Equipment and Supplies, Ltd., Westfields Road, North Acton, London, W.3, the Alcolor breath-meter, a device that is officially used, it is understood, by police on the continent of Europe. where it has been found reliable. Orders have been taken for 50,000 of the Alcolor in the past six weeks.



SPOTTED: A new wrapper with eye-catching spot design for Izal soft toilet roll, seen at first only on double pack. Supplies of white will be followed closely by pink, yellow and green, with blue completing the change-over. Makers are Izal, Ltd., Thorncliffe, Sheffield.

TRADE NOTES

Back Once More.—Revlon's remover pads for eye make-up are again available from Revlon International Corporation, 86 Brook Street, London, W.1.

Larger Packs. — The British Drug Houses, Ltd., Graham Street, London, N.1, have introduced a 250-tablet pack of Ancoloxin and a 250-capsule pack of Entair-A.

Used by U.S. Police.—The Sobermeter imported by Kerby, Johns and Associates, Ltd., 135 Cherry Orchard Road, Croydon, Surrey, is used exclusively by the *American* police, and not as previously stated.

Change to Metric Pack. Boehringer Ingelheim, Ltd., Isleworth House, Great West Road, Isleworth, Middlesex, have adopted a 20-gm. pack for their Vasculit drops instead of former 1-oz. pack which is being discontinued.

Too Late for Supplement.—Stafford-Miller, Ltd., 166 Great North Road, Hatfield, Herts, are increasing the price of Dentu-Creme (large size) on February 14, to 22s. 4d. per doz, tax 5s. 7d., each retail price 3s. 3d.

95 per cent. to Chemists. — Supermarkets, cut-price stores, grocers all sell tooth-brushes, but not Kent tooth-brushes, say G. B. Kent & Sons, Ltd., 24 Old Bond Street, London, W.1. 95 per cent. of the brushes are sold direct to chemists.

Additional Sizes.—Enterosan tablets against diarrhœa, previously available in travel pack of sixteen, are now additionally offered in family pack of forty-eight tablets and dispensing pack of 480. Makers are Mayfair Chemicals, Ltd., 33 Station Road, Chadwell Heath, Essex.

Automatic Tweezer. — I. & M. Steiner, Ltd., 5 Charleville Road, London, W.14, market an automatic tweezer (length 4 in.) which, they claim, withdraws hairs as it grips them. It has individually ground oblique points and white plastic body and is supplied in plastic case on single showcard.

No Substitution. — Continental Laboratories, Ltd., 85 Church Road, Hove, 3, Sussex, issue a warning that prescriptions for Co-tab tablets must be filled with the company's products because Co-tab is a registered trade mark, and substitution may be the subject of civil action for damages and penalties under N.H.S. tests.

Minimum Wholesale Order. — Riker Laboratories, Morley Street, Loughborough, Leics, announce that the smaller pack (a 60-mil bottle) of their laxative Dorbanex is being supplied to wholesale pharmacies from February 28, only in multiples of 1 doz. (minimum order 1 doz.). The step has been taken to simplify ordering procedures and to facilitate rapid delivery of orders.

Bonus Offers

CUSSONS SONS & CO., LTD., Kersal Vale, Manchester, 7. Spring Fancy talcum powder. Twelve invoiced as ten. Until March 25.

PRACTICAL PHARMACEUTICALS, LTD., 50 Jesmond Road. Newcastle upon

Tyne, 2. Hermesetas. Twelve invoiced as eleven. Till March 31.

Rayette Beauty Products, Ltd., London House, Bath Road, Slough, Bucks. Aqua-Net aerosol hair spray. Thirteen invoiced as twelve.

Remington Electric Shaver, Ltd., 26 Kensington High Street, London, W.8. Men's toiletries. Thirteen (mixed. in counter "dispenser") invoiced as twelve.

Premium Offers

Beecham Toiletry Division, Beecham House, Brentford, Middlesex. Macleans tooth-paste. Five begonias at a reduction of 5s. 11d. plus threepence, fourpence and sixpence off standard, large and economy packs respectively in Southern, T.W.W. and Westward television regions.

J. Chandler & Co. (Buckfast), Ltd., Abbey House, Peterborough Road, London, S.W.6. Buckfast tonic wine. Set of six mirrored glass, cork-backed table mats in return for wrapper or part wrapper from bottle or half-bottle plus 17s. 6d.

Farleys Infant Food, Ltd., Torr Lane, Plymouth, Devon. Farley's rusks. Acrilan/wool sleep gown for baby. For 28s. 11d. plus any two Farley's packet tops.

Gerber Division, Brown & Polson, Ltd., Claygate House, Esher, Surrey. Gerber baby foods new range of meat dinners. Chad Valley Bri-Nylon Easter bunny at special price of 17s. 6d. Offer closes April 30.

Jackel & Co., Ltd., Shuna Place, Maryhill, Glasgow, N.W. ProteiNail. 2s. tube with 9s. 11d. size pack.

Rayette Beauty Products, Ltd., London House, Bath Road, Slough, Bucks. Staffordshire pottery cover for 8-oz. Aqua-net aerosol hair spray can at a reduction of 10s. 9d. (Offer promoted by tag on 8-oz. can.)

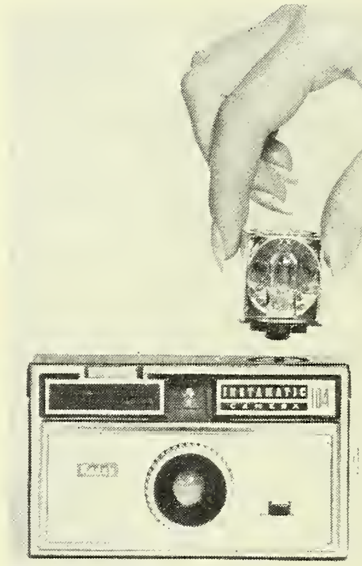
Remington Electric Shaver, Ltd., 26 Kensington High Street, London, W.1. Selectric shaver. One free toiletry with each purchase.

MORE DETAILS ON FLASHCUBES

Suitable cameras soon to be available

IN a joint announcement recently Kodak, Ltd., Kodak House, Kingsway, London, W.C.2, gave details of the models of Instamatic cameras that will be available for the recently developed Flashcubes (see *C. & D.*, August 21, 1965, p. 180), and Atlas Lighting, Ltd., gave further information about the Flashcubes themselves. The Atlas Flashcube contains four blue flash-bulbs, smaller in size than an AG1B, each with its own parabolic reflector.

The unit is encased in transparent plastic shield approximately 1 in. wide on each side. The cube uses only the new universal blue flash-bulb, which has a colour temperature of approximately 5500°K. It is balanced to average colour film response and may be used with black-and-white film, indoors or out. The cube may be used with suitably designed cameras with "x" synchronisation at shutter speeds up to 1/30 sec. and at all shutter speeds with "m" synchronisation. After each shot is taken, the Flashcube automatically rotates in Kodak Instamatic cameras to the next position. As it turns, positive electrical continuity is assured as the contacts are wiped clean as the cube rotates. The reflectors, it is claimed, provide even light without hot spots. The cube being sealed, the reflectors do not become scratched, smudged, dirty or dull before use. The Flashcube is also cool after use, owing to the external protective shield. The three new cameras are the Instamatic 104, the Instamatic 204 and the Instamatic 304. Models 104 and 204 are first being marketed in outfit form, each outfit containing camera, cartridge of Kodacolor-X film, three Flashcubes, two batteries, wrist strap and instruction manual.



The Atlas Flashcube is simply pushed on to the socket on the Instamatic camera to provide four quick-firing flashes.

The Instamatic 104 is similar in design to the Instamatic 100 camera. It has a fixed-focus 43-mm. f/11 lens and two-speed shutter, with 1/90 sec. for sunlit pictures and 1/40 sec. for "cloudy bright" and flash pictures. The shutter speed is automatically adjusted when a Flashcube is fitted. Flash pictures can be taken between four feet and nine feet with either colour or black-and-white film. The camera takes Kodisk lens attachments size 285. The Instamatic 104 outfit becomes available on March 21 and the camera will be available separately in the autumn.

Two Models in May

The Instamatic 204 model has the "dial the weather" exposure guide that characterises the "Instamatic" 200. With fixed-focus f/6·6 lens and two-speed shutter of 1/60-sec. and 1/40 sec. Shutter speed is automatically adjusted when the Flashcube is fitted. Flash-to-subject distance is adjustable between three feet and twelve feet, with both colour and black-and-white film. The camera takes lens attachments size 255. Both outfit and camera become available in May.

Model 304 in the range has a built-in exposure meter and a low-light signal warns when flash is needed. The camera has fixed-focus 41-mm. f/8 lens and two-speed shutter of 1/60 sec. and 1/40 sec. Speed is automatically adjusted when the Flashcube is fitted. Flash pictures can be taken between four feet and nine feet. The camera takes lens attachments size 255. It becomes available on May 2.

MANUFACTURERS TAKE A HAND

Three contributions to antibiotics progress

A NUMBER of companies have made important contributions to antibiotic progress which are not covered in the story (p. 157) on how penicillin was developed in Britain. Among them are:—

Leo Laboratories, Ltd.—During the 1939-45 war, despite complete isolation from the outside world, the company independently produced the first Danish penicillin and by 1943 the antibiotic was available in a sufficiently purified form and in adequate quantities to treat the first patients. The experience gained by that development laid the foundation for intensified research into the development and production of many other individual antibiotics, the latest being Fucidin (sodium fusidate).

Parke, Davis & Co. — Best known contribution of the company to antibiotics has been the development of chloramphenicol (Chloromycetin), which was the first antibiotic of wide antimicrobial range, the only one useful for the practical treatment of typhoid fever, and the first for which chemical synthesis was economically and technically practical for large-scale production. First phase in the discovery began when P. R. Burkholder, a mycologist at Yale University, who was examining soil samples, sent cultures having antibiotic activity to the Parke-Davis research laboratories. From one, later named *Streptomyces venezuelæ*, Parke-Davis workers isolated an antibiotic substance with a broad range of action, low toxicity for animals, great stability, and effective absorption from the gastrointestinal tract. The company's chemists isolated the active compound in pure crystalline form, later elucidating its structure and developing a synthesis suitable for commercial production. Viomycin, a tuberculostatic antibiotic having properties similar to those of streptomycin, was isolated by Bartz *et al.* in the Parke-Davis research laboratories in 1951 and independently by Finlay *et al.* in the same year. Humatin (paromomycin), first marketed by Parke, Davis in the U.K. in 1960, is an oral wide-spectrum antibiotic which exhibits effective amœbicidal and wide antibacterial activity.

Bristol Laboratories, Ltd. — The American parent of this British company took part in a research and development programme on semi-synthetic penicillins with Beecham Research Laboratories, following the latter's isolation of 6-aminopenicillanic acid from fermentation broths. That programme resulted in the joint announcement of the first of the "new" penicillins — phenethicillin—in 1959. The company claims to be one of the largest producers of tetracycline and its salts, and has more recently introduced Tetrex, a tetracycline-phosphate complex giving faster absorption and higher blood levels than tetracycline hydrochloride. Bristol scientists also developed and evaluated kanamycin after its initial discovery in Japan.

Correspondence

Letters when received must bear the name and address of the sender, not necessarily for publication. The Editor does not hold himself responsible for the views expressed.

Trading Policy

SOMEBODY UNBIASED PLEASE EXPLAIN DIFFERENCE BETWEEN UNICLIFFE TREATMENT OF CHEMISTS AND NATIONAL PHARMACEUTICAL UNION TREATMENT OF G. B. KENT=BARLOW ISLINGTON (by wire).

SIR,—TCP. CONTRACT POINTERS:—
TCP. COTY. PFIZER.
(F)UN(N)ICLIFFE

SIR,—With reference to the action by Unicliffe, Ltd., and the company's new trading policy, a letter of protest has been sent from a meeting of Plymouth chemists, also stating that there will be no further support in this area.

MERVYN MADGE, *Secretary*,
Plymouth

SIR,—I have today written to Unicliffe, Ltd., cancelling our T.C.P. contract, and refusing to see the company's representative. We only hope that many chemists throughout the country will do the same.

B. MARKS,
Clevedon, Somerset

SIR,—Now it is T.C.P. in the grocers. Last time it was Limmits. Next time, perhaps, l'Aimant talc and creamy skin perfume. When American firms take over the first casualties appear to be ethics and fair dealing.

BRIAN V. ATKINS,
Whitley Bay, Northumberland

SIR,—I enclose copy of the letter I have today sent to Unicliffe, Ltd. I shall inform you further of the reply, if and when it arrives.

> IN consideration of your policy change regarding distribution of T.C.P. products, I am returning my contract for amendment. As you are prepared to sacrifice my goodwill in changing this policy, I shall require compensation for this. Will you kindly amend the contract to read a further cash discount on the trade value of 12½ per cent. over and above those discounts already allowed. I await your reply, and return of the amended contract at your early convenience.

K. W. RATHBONE,
Alrewas, Staffs

SIR,—I am heartened to note the number of pharmacists who show more spirit than of yore. At last the profession is awakening to the fact that "scarcity value," as demonstrated by locum position makes it unnecessary to prostitute one's profession to make a living. I append copy of letter sent to Unicliffe, Ltd.

> SINCE 1948 I have been one of the pharmacists holding a T.C.P. contract and helping to put the product on the map. Your action in handing over this accumulated goodwill to the grocers destroys any interest in this, or other, of your products. Under the circumstances it will be a mutual waste of time for your representative to call. Please advise him accordingly.

E. W. S. BURROWS,
Haywards Heath, Sussex

SIR,—Having received the Unicliffe *apologia ad nauseam* regarding the extension of T.C.P. sales to non-pharmaceutical outlets, I wonder if Messrs. Unicliffe realise that T.C.P. would hardly be an impulse seller in a supermarket, etc., where they have no time for display cards. A packet of something to sell occupies all available space, and who is going to advise on the uses of T.C.P.? Will the great fall in pharmaceutical sales and the loss of goodwill in other lines be offset by the problematical increase in sales through other outlets? Now is the heaven-sent opportunity for the National Pharmaceutical Union to promote similar lines, which I feel certain would compel overwhelming support. It would be interesting to see the type of circular, sent confidentially of course, by Unicliffe, Ltd., to the grocery trades, or have they been awaiting the reaction of the chemists, first? If so, they have had a most emphatic answer. Has the increase in price been caused by their knowing that they will have a lot of smaller accounts to deal with—besides heavier carriage charges? Far better to have let the 14,000 chemists continue to handle and recommend as they have done so consistently for nearly forty years. The original business prospered from the first, and never looked back, as may be seen from its profits record. Perhaps Messrs. Unicliffe will have second thoughts. There are so many possible repercussions for them to proceed further.

R. S. F. GUY,
Pevensey Bay, Sussex

SIR,—A copy of the enclosed letter has been sent to the marketing director of Unicliffe, Ltd.:—

> IT appears to me that Pfizers, Ltd.. and associated companies are out to gain the distinction of being the most despised pharmaceutical company in the world. We have stood for quite a lot in the past few years, and the policy decision re T.C.P. is just about the last straw. The Limmits fiasco was the thin end of the wedge, leading to an interest in door-to-door marketing of cosmetics and now this! And yet we are exhorted in the professional journals, and by your representatives to give your parent company's brands of tetracyclines on "open" prescriptions. This is positively laughable. Loyalty appears to be a dirty word in the circles of big business, and from this day T.C.P. is the dirtiest word in this small business. Display is out, recommendation is out and if your representative calls he will be out. To avoid an embarrassing situation, I would be obliged if you would instruct him to delete my name from his list of calls. As regards the last-but-one paragraph in your letter, may I say that if you *do* get the increased business for which you are striving, and you *do* market new products, my advice is:—Go peddle them to the grocers—they, at least, will be pleased to see your representatives—and they are welcome to them.
>
> P.S. Selling-in your cough treatment just before breaking this news was a neat move. I trust that pharmacists throughout the country will give it the support it deserves—NONE!

D. M. COWEN,
Leeds, 8

SIR,—I enclose a copy of a letter I sent on January 27 to the marketing manager of Unicliffe, Ltd.

[The following are extracts only, not the whole letter.—EDITOR.]

Your letter is the most contrived and blatantly insincere attempt to excuse the inexcusable that has come into my possession for a long time, and I would not wish you to be under any misapprehension as to the effect it will have upon general-practice pharmacists. I would first point out that, while T.C.P. might be classed as a liquid antiseptic, it has never been promoted as such, and is certainly not regarded as such by the lay public. Whatever the true evaluation of T.C.P., the public regard it as unique, and it is dishonest to speak of "major competitors": If, on the other hand, you regard the type of "antiseptics" which are freely available from unqualified outlets as competitors, it is difficult to understand why you were ever interested in acquiring the product. Even more dishonest is your assertion that your action should not be interpreted as a lack of faith in the future and efficiency of G.P. pharmacists, for it is nothing else but that. It is, in fact, a continuation of the Pfizer policy of recent years, in which the G.P. pharmacist is openly regarded as your enemy. Consider the events since Pfizer diversified and produced a series of utter failures in the retail field of pharmacy. First major pharmaceutical manufacturer to take a dietary product outside the profession; first to descend to the level of door-to-door selling of cosmetics; first to acquire an established and respected "chemists only" business for the sole purpose of flogging to unqualified outlets. A shameful record indeed. Consider not merely your betrayal of pharmacy, but the fact of imposing a substantial price increase immediately before exploiting the unqualified market. That action is not capable of being misinterpreted, nor of being disguised. Finally, and most important, your latest action is a direct betrayal of the Council of the Pharmaceutical Society, which is currently endeavouring to bring home to the public the fact that medicines and medicinal substances are not ordinary articles of commerce to be available for consumer selection and chance buying. Your irresponsible and ill considered action, solely for monetary gain, can only be a set-back for pharmacy. Yet it is not impossible that your actions will, in the long run, be to the benefit of pharmacy. The burden of condoning the unethical and sometimes unscrupulous commercial activities of certain manufacturers becomes increasingly difficult to bear. Perhaps yours will be the straw that, while not breaking the back of this particular camel, spurs it into positive action. Such action must come sooner or later, and this is as good a time as any.

W. A. Beanland,
Rossendale, Lancs

Antiseptic and Competitive

Sir,—Could any of your readers suggest a satisfactory formula for a really safe, soothing, healing antiseptic suitable for "counter-prescribing"? I have in mind an iodised preparation (for external and internal use) which could be described as non-toxic, non-caustic, analgesic, antithermic, endosmotic, keroplastic, non-hæmostatic, stable, etc. The list of ingredients of one such preparation (chlorine 0·4 per cent.; iodine 0·11 per cent.; bromine, a minute trace; phenol 0·63 per cent.; salicylic acid 0·045 per cent.; with the partial elimination of the ionisable halides) suggests that my manufacturing costs would be very low indeed and my antiseptic would be very competitive with any similar line carried by the super-markets.

Pelargius

As Sold by Harry Donkey

Sir,—It was bound to happen sooner or later, same as it happened to Limmits, same as it will happen eventually with Coty. When Unicliffe or what's-its-name started sacking the T.C.P. representatives, I got the hunch that it wouldn't be long before "Harry Donkey" (our local travelling greengrocer) would be selling it. What a wonderful opportunity for N.P.U. Holdings, Ltd., to team up with our old friends Maws and get cracking on a really up-to-date formulation for chemists only. Let us face the fact that the formula of T.C.P. is twenty years or more out of date, so it shouldn't be too difficult to devise something in line with modern requirements. In the meantime of course, we also have Savlon, and I cannot see "Harry" ever getting this.

G. L. Beet,
Bolton-le-Sands, Lancs

Almost a Farce

Sir,—How many of your readers noticed the remark in the last edition of *Glaxo Topics*, Glaxo baby foods can only be bought from chemists? Noticing that Glaxo, Farex, etc., were being sold in a nearby grocery store, we wrote to Messrs. Glaxo. I enclose their reply. [The reply states that Messrs. Glaxo restrict the supply of display material to chemists and direct the public to the chemist in all their advertising, do not supply any grocer with Glaxo baby foods, and do their utmost to ensure that the foods are not available from grocers in areas adequately served by chemists. In general they have found the policy effective, but it is one of the reasons why "the practice of limiting the distribution of infant foods to certain classes of retail outlets" has been referred to the Monopolies Commission by the President of the Board of Trade.] In my view that makes the words "chemists only" almost a farce. Today I received a circular from Unicliffe, Ltd., telling me that T.C.P. preparations are being made available to stores, etc., because over 50 per cent. of retail trade is through those outlets. It was the chemists who made the sales of T.C.P. preparations by recommending and showing them. We have written to Messrs. Unicliffe, Ltd., registering our disagreement with their new policy.

G. E. Jones,
Liverpool, 6

Sort Them Out

Sir,—No doctor worth his salt would prescribe, nor would any chemist in his right mind recommend, a gastric irritant for the treatment of indigestion. Yet month after month viewers of commercial television are exhorted to treat upset stomach with a fizzy aspirin. And if upset stomach doesn't mean indigestion and if aspirin is not a gastric irritant then I am Bernard Levin's great-grandfather. I see that another firm has jumped on the bandwaggon. It may be that the addition of a small amount of caffeine could be claimed to impart pick-me-up qualities; but the showcard (in the windows of a multiple), which states that, if you are "out of sorts," the new preparation will "sort you out," does nothing to encourage the serious attitude to medicines which the Society would like the public at adopt.

Raymond Hutchinson,
London, S.E.7

Manufacturers Please Note

Sir,—The list of advertisers on commercial television which appears every week in The Chemist and Druggist is extremely useful but my one criticism is that it is not comprehensive. For instance, last week ten products are mentioned as appearing on Grampian television, but the following, which appeared to my knowledge from occasional viewing, were not listed:—Atomol, Wilkinson blades, Colgate tooth-paste, Scotties, Horlicks, T.C.P., Macleans tooth-paste, Antussin. I appreciate that it is probably up to the manufacturers to notify you of intended advertising but if you could ensure that the list is more comprehensive this would be to everyone's advantage. In our own case, we arrange small displays to tie in with this advertising but often the first we know of it is an advertisement appearing on the screen, sometimes for a new product completely unknown to us.

H. Clyde,
Kirkwall, Orkney

Domination by Accountants

Sir,—I am of the opinion, which has been confirmed by the recent T.C.P./Pfizer fiasco, that one of the main causes of trouble in the pharmaceutical industry is the increasing amount of executive power wielded by accountants. The bigger the company the bigger the heads of its accountants. We can all bring to mind decrees issued by companies which retailers think are wrong, which representatives know are wrong, and which even sales managers have doubts about, yet the decrees are put into effect. One will probably find that in these companies the accountants are in the ascendant. It is useless to argue scientific, medical or pharmaceutical ethics, trade customs, or even common sense with such people. All they are interested in are statistics and they are in the fortunate position of being able to ply their trade regardless of the product being manufactured. In most industries that state of affairs is not of serious consequence, but in the pharmaceutical industry where the health and well-being of the public is affected, for many obvious reasons no one in his right senses would advocate nationalisation of the pharmaceutical industry. The danger is that, by the short-sighted and irresponsible actions of accountant-minded executives, greedy for steeply increased profits, the industry will bring on itself the very fate it wishes to avoid. The tragedy will be that thousands of doctors of science, medicine and philosophy, who have been manipulated like marionettes by *en trepreneurs*, will be included in the ruin of the industry, while the men whose greed brought about the downfall will move on to fresh pastures. Far from thinking that Dr. A. M. Phillips is out of step, I think that most of his allegations are true, though I don't agree with his strictures on the pharmaceutical Press.

R. J. Hayhurst,
Nelson, Lancs

Protest Policy

Sir,—The recent announcement by the Pfizer group of their future policy has no doubt brought a spate of letters to your office declaring that the writers are ceasing to display T.C.P. products, not stocking them, not renewing contracts, etc., all of which will no doubt have the beneficial effect of relieving the feelings of the correspondents, but will otherwise be quite impotent. We think it might be worth while to restate a line of approach, which we advocated in print some years ago, but which met with no comment, not even adverse. At that time correspondents were stating that they were refusing to stock "television advertised" products as they were distributed to establishments other than pharmacies. We suggested that that was merely turning away business unnecessarily and unlikely to have any effect on the distribution policy and that a variation on it might prove more successful, namely continue to sell the free-for-all products for which a demand exists, but to boycott those items in the list which by law can only be sold through pharmacies. The ban should extend to the prescription products as far as possible. In the case of Pfizer, despite their undoubted contribution to medicine, there are few items in their list which could not be substituted by those of other houses, and most doctors would be quite happy to do that rather than that the patient should wait a day or so for a Pfizer brand. Such a scheme would, of course, require 100 per cent. co-operation of pharmacists, and perhaps a "test market area," being more easily organised, would suffice to demonstrate to the faint-hearted and the companies concerned what a powerful weapon it could be. At the present moment, the Boots, Burroughs Wellcome & Co., Glaxo, etc., groups, greatly outnumber Beecham, Bayer, Pfizer, etc., but each year sees a shift in the adverse direction.

McLean & Sons (Chemists), Ltd.,
Gorleston-on-Sea

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Voting for a Plan or Voting Blind?

Motion 22 on the list presented for consideration at the Branch Representatives' meeting in May, dealing as it presumably does with the controversial subject of limitation of pharmacies, is likely to arouse equally vociferous expressions of opinion both for and against. The motion is put forward by the Council, and makes use of the phrase "the planned distribution of pharmacies," which may or may not be synonymous with limitation.

Though the topic is almost as old as pharmacy itself, we need only go back, in considering the implications of the motion, to the report on the General Practice of Pharmacy, first discussed at the second professional session of the British Pharmaceutical Conference at Portsmouth in 1961. The Council, commenting on the report in April 1963, suggested that a recommendation it had made to the Government in 1945, when the establishment of a National Health Service was being discussed, should be readopted. It was "that participation in the Service should depend upon local needs. It would have virtually the same effect, and in view of the medical precedent should not be so difficult to achieve, as the limitation of pharmacies." Representatives of the Pharmaceutical Society's branches who discussed the report on May 22, 1963, rejected the section dealing with the limitation. As the *C. & D.* then reported (May 25, 1963, p. 563), "it appeared that the speakers on the floor, whilst agreeing with the need, took exception to the Council's view that the limitation would best be achieved by again putting forward to the Government that participation in the Health Service should depend upon local needs. It was made clear during the discussion that, if a neighbourhood was already well catered for, anyone opening a pharmacy should not get a contract for National Health prescriptions but would still be able to sell poisons and dispense private prescriptions.

In May 1965 the Branch Representatives' meeting passed a resolution declaring that the Council of the Society should seek powers to regulate the location of new pharmacies, and should take steps to ensure an equitable distribution of pharmacies throughout the country. The secretary and registrar on that occasion referred to the General Practice Committee's recommendation that there should be a planned pharmaceutical service, but suggested that merely to consider limiting pharmacies was too narrow a basis on which to deal with the problem of redundance. What was then being proposed was, he claimed, already being done. A start had been made on planning a survey that would create something like a "domesday book" for pharmacy. It "looked like being a pretty long and pretty expensive operation." It would mean that the Council would go ahead and spend the money involved in providing the information on which the decision should ultimately be taken. That motion was approved.

It would appear, therefore, that since the 1965 meeting sufficient progress in the survey has been made to allow the Council to submit the motion to the representatives. If that is so, then it is unfortunate that the motion is not accompanied by a statement giving in detail the reasons for the Council's decision and the methods to be adopted for its achievement. The subject is of such importance to the membership that no relevant information should be denied them, or given with too little opportunity to think it over before being asked to vote on a motion on the subject. Publication of the list of motions during February allows little enough time for branches of the Society to arrange meetings and discussions and to give instructions to their representatives. To ask representatives to express opinions on this vital topic in the light of information given after the briefing they receive from the branch is fair neither to them nor to their branch colleagues.

Antibiotic Revolution

An important landmark in the fascinating story of antibiotic development, namely the twenty-fifth anniversary of the first therapeutic use of penicillin, is recalled in a supplement to this issue, and indeed in the issue itself.

Today the general practice pharmacist takes almost for granted that his shelves must be lined with bottles, boxes and tubes holding, it seems, an endless permutation of countless antibiotics, each apparently presented in every possible dosage form. He will at times grouse about the space they occupy, the duplications they imply and the stock investment they demand, but if he sometimes pauses to ponder the matter he will set against those drawbacks the benefits the antibiotics have brought to that person of central importance: the patient.

Two articles in the supplement—those by Dr. E. T. Knudsen and Dr. M. J. T. Peaston—provide evidence of the wide variety of diseases now treated with this class of drugs. Many were killers only twenty-five years ago—a fact that is too easily forgotten when the "jab in the buttocks" becomes a common-place cure-all.

One may speculate on what medicine might still have been in 1966 if Fleming had not, in 1928, looked further into the effects of chance contamination of a culture plate, and if Florey and Chain, a decade later, had not made the vital decision to study *Penicillium*. Would the chemist, by synthesising hypothetically active substances, have produced anything approaching penicillin in combined antibacterial power and safety? It is significant that only by chemical modification of penicillin itself have substances with wider powers been produced that still share the parent compound's exceptionally low toxicity for the host. How and why that should be is discussed by Dr. W. B. Hugo in his article on the mode of action of the drug.

For the pharmaceutical industry, antibiotics have opened up entirely new fields of production and research. Had the techniques of culturing large quantities of moulds been known to the industry in 1942, penicillin might have remained a wholly British triumph. Instead Fleming, Florey and Chain did not patent their discoveries, and the British process patents stand in the name of an American. Even so, antibiotics as a group are an important commodity among United Kingdom pharmaceutical exports coming second only to proprietary medicines. For 1965 (see *C. & D.*, February 5, p. 133), their total value was nearly £14 millions, against just under £2½ millions' worth imported. Penicillin stimulated the industry, too, to new extremes of activity in bacteriological screening. For the companies involved, the exercise has probably continued to pay dividends in other fields.

For pharmacists in the industry antibiotics have created new problems in formulation and presentation. Some of those problems are discussed by Mr. K. A. Lees. In pharmaceutical general practice antibiotics have involved new controls to comply with, for the Penicillin Act, 1947, for the first time restricted the sale and supply of substances not regarded as poisons, leading to the extended definition in the Therapeutic Substances (Prevention of Misuse) Act, 1953, of "substances appearing . . . to be capable of causing danger to the health of the community if used without proper safeguards." Under such safeguards no one can question that antibiotics have made a tremendous contribution to the health of the community. Yet the battle is still not won. There remain patients sensitive to antibiotics that would otherwise be the safest agents to use against their disease. The fight against resistant strains of bacteria, though engaged, is a long way from total victory, and the newly recognised factor of transferable resistance is needing careful examination. In twenty-five years the antibiotics have produced a revolution in medical treatment. The next twenty-five years could be just as exciting.

O.K. for Sweetness

When the Ministry of Agriculture and Fisheries allows the use of artificial sweeteners, other than saccharin, in food, as it is expected to do before long, the United Kingdom's annual sugar consumption could well go down by about 100,000 tons (a reduction of 3 to 4 per cent.). The Ministry's approval is unlikely to be delayed longer than is necessary to draft the necessary legislation, now that the Food Additives and Contaminants Committee on Cyclamates has issued its report (see p. 145).

The Committee produced its report in November 1965 but its recomendations have only now been published. The report records that the proposal to allow the use of cyclomates in food was referred to a pharmacology subcommittee. That committee expressed itself as impressed by the information available to support the safety-in-use of cyclamates.

Ingestion of cyclamates, the subcommittee found, was unlikely in normal circumstances to present a hazard to health though, when substantial amounts were consumed, there was a laxative effect. That result is unlikely to occur unless daily intakes are above 50 mgm. of cyclamates per kilo of body weight. The subcommittee accordingly endorses the acceptance of cyclamates as ingredients of foods at daily intakes below that level, subject to the completion of further long-term feeding studies within five years. Further work on the mechanism of the laxative effect is also considered desirable.

Though it is unlikely that the new decision will closely implicate pharmacists, since the increased use of the cyclamates that is likely to result from the recommendation will be food formulations, some of which may be sold as finished or packed preparations, they are likely to become concerned with new tablet formulations containing both saccharin and cyclamate. The Ministry of Agriculture is proposing that any such tablet should contain not less than 1 mgm. of saccharin and not less than 15 mgm. of cyclamate.

The outstanding problem that now appears to require attention concerns the labelling of artificial sweeteners and products containing them, and the Ministry of Agriculture has requested comments from interested organisations before March 31. It is evident that some labelling provisions are necessary, probably throughout the whole range of food products in which artificial sweeteners are used, but most certainly among the variety of sweetening tablets that may be expected to emerge. Without clear and uniform labelling both customer and seller may be thrown into doubt and confusion.

Letting in the Light on Companies

The Companies Bill, which received its initial reading on February 3 (see p. 146), should, when enacted, let some light into dark places. Much was made by the daily Press of the fact that contributions made to political parties must be disclosed in the accounts. There are, however, far more important changes in the Bill for companies to consider. Private companies will remain "private" no longer, for they will be required to forward copies of their accounts, of their auditors' reports and of directors' reports to the Registrar of Companies. The information to be given in the accounts is being greatly extended, too, by requirements such as that the chairman's actual emoluments shall be divulged, as well as those of other directors (anonymously for them). Where a company's turnover is attributable to differing classes of business the company report must state the proportions in which the turnover is divided, and give an opinion on the profitability or otherwise of the divisions. Many forward-looking pharmaceutical companies have for some time been giving an indication of their export turnover, and comparative figures over previous years, both of which are requirements of the Bill. Those progressive companies have also been indicating, albeit often rather casually, the profitability of their various sections. Few, however, have hitherto disclosed the actual turnover of each section.

For the investor the more such information is given the better, but for the small firms the disadvantage may be that the information now to be disclosed to anyone upon payment of one shilling at the Registrar of Companies office will assist both competitors and companies bent on further take-overs. It will show how profitable, or otherwise, the [smaller] businesses are as well as their turnover. One let-out for the small company not wishing to divulge such information will be to re-register as an unlimited company, though that opening will not be available to subsidiaries of limited companies. It will be illuminating to see how many decide to take this action and revert to partnership trading.

Penicillin Proves Its Therapeutic Worth

FIRST CLINICAL TRIAL IN 1941 AND ITS TREMENDOUS OUTCOME

FIRST patient to be administered penicillin in Britain—in any country—was a policeman at Oxford on February 12, 1941. He was a patient at the Radcliffe Infirmary and was under treatment for blood poisoning caused by a mixed infection of *Staphylococcus aureus* and *Streptococcus pyogenes.* Despite sulphonamide treatment he was dying, and it was decided in an attempt to cure him to use all the penicillin that then existed at Oxford. Unfortunately the trial was being made in the absence of sufficient material, and a marked improvement in his condition could not be sustained. Even though penicillin excreted in the urine was extracted and readministered there was still not enough, and he died on March 15. The penicillin had been shown, however, to have possibilities of proving itself a real " wonder drug " in the treatment of infections.

Fleming's Original Paper

From that time it was launched as a therapeutic agent. Penicillin's potentialities had by that time been known for twelve years—even since Alexander Fleming had published in the *British Journal of Experimental Pathology,* a paper on " The Antibacterial Action of Cultures of a *Penicillium,* with a special reference to their use in the isolation of *B. influenzæ.*" In the paper Fleming reported on work he had carried out since first noticing that staphylococcus colonies failed to grow round a large colony of a contaminating mould. From the mould he prepared a " mould broth filtrate " to which, because that phrase was " rather cumbersome " he gave the name " penicillin." Fleming found the action of the penicillin to be marked, both on the pyogenic cocci and on the diphtheria group of bacilli, though many bacteria, for example the coli-typhoid and influenza bacillus groups and the enterococcus, were insensitive to it. Observing that, even in enormous doses, penicillin was non-toxic to animals, and that it did not interfere with leucocytic functions, Fleming suggested that it might be an efficient antiseptic for applying to, or injecting into, areas in which penicillin-sensitive microbes were present.

There being no chemist on the staff of St. Mary's Hospital, London, Fleming was unable to pursue the investigation of penicillin's activity, and it was not until 1939 that serious work began at the Sir William Dunn School of Pathology at Oxford University. Leader of the team was Howard (now Lord) Florey, professor of pathology, aided by E. B. Chain as chemist, and others. Fleming, Florey and Chain were jointly awarded the Nobel Prize for Medicine and Physiology in 1945 for their work on penicillin.

In 1940 the collaborators were able to publish in the *Lancet* interim results of their work. The experimental use of the substance in animals was at that stage extended to human patients, and by August 1941 the team were able to publish observations on their first clinical cases. The results were promising, but the problem presented itself how penicillin could be produced in quantity. British industry was at that time fully occupied with its war effort against Germany, so Florey went to New York to enlist American aid. Because, however, the objective was solely to increase penicillin supplies, no attempt was made to file patents covering any of the discoveries of the team. As an outcome of Florey's visit workers at the Northern Regional Research Laboratory, Peoria, of the United States Department of Agriculture developed the use of cornsteep liquor as a medium in which to grow the penicillium mould, and with that medium they were able to increase enormously the production of penicillin. Back in Britain Florey approached home manufacturers to help with supplies so far as they could, and from September 1942 small amounts of the antibiotic became available.

Government Aid Enlisted

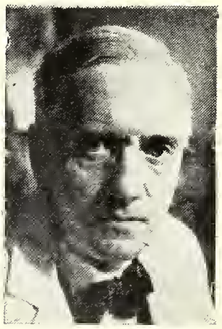
About that time also Fleming made use of some of Florey's material. He was so impressed with the cure he obtained in a patient that he approached the Government to urge that it should take steps to encourage the production of penicillin in Britain. The result was a conference attended by Ministry of Supply officials, representatives of the Army Medical Directorate, of Imperial Chemical Industries, Ltd., Kemball, Bishop & Co., Ltd. (since incorporated into the Pfizer Group), the Therapeutic Research Corporation (comprising the British Drug Houses, Ltd., Boots Pure Drug Co., Ltd., Burroughs Wellcome & Co., Glaxo Laboratories, Ltd., and May & Baker, Ltd.), and by Fleming and Florey. A General Penicillin Committee was formed with a pharmacist (the late Mr. Arthur Mortimer) as its chairman.

To grow the penicillin mould by deep fermentation was not considered. The British workers concentrated upon developing on a large scale the surface-culture process already known to yield penicillin, even though in small quantities. As a result of the Committee's pressures several British manufacturers built new, or adapted existing, factories to produce penicillin by the surface-culture method. The entire British production was allocated to the armed forces, but as civilian needs had also to be thought of the Ministry of Supply decided to build a factory for large-scale production by the deep-fermentation method at Speke, near Liverpool. At its completion in 1945 the venture became the largest penicillin factory in the world. Almost at the same time Glaxo Laboratories, Ltd., were building with Government aid a factory at Barnard Castle, co. Durham, also for deep-fermentation production, which was now recognised to be the most efficient means of production. At the end of the 1939-45 war the Government's need to participate in the production of penicillin for the armed forces ceased, and the Speke factory was purchased by the Distillers Co., Ltd., whose workers had been staffing it throughout.

Production Still Increasing

With the coming into operation of the Speke plant, penicillin production in Great Britain rose tenfold from a weekly 6,000 mega units in 1945 to 60,000 mega units in 1946. By 1948 the figure had risen to 186,000 mega units. Since then, production has increased in almost every year and in the last twelve-month period for which figures are available (ended November 1965), the average weekly output was over 5 million mega units, showing just how important a contribution the drug is still making to medicine, despite the advent of other compounds.

PENICILLIN PERSONALITIES



Alexander Fleming (1881-1955), a Scot, worked most of his life at St. Mary's Hospital Medical School, where he eventually became professor of bacteriology. He discovered lysozyme and published the classical first paper on penicillin (which he named), even testing the drug's effect on infected wounds, with moderate success.

Howard (later Lord) Florey, an Australian, became professor of pathology at the Sir William Dunn School of Pathology at Oxford University in 1935. His studies on lysozyme were to lead him to decide, with E. B. Chain, to explore the field of bacterial antagonism. They started on *Penicillium notatum.*

Antibiotics in Veterinary Medicine

SOME PROBLEMS OF FORMULATION

(A companion contribution to "Pharmaceutical Aspects of Antibiotics" in the inset "25 YEARS OF ANTIBIOTICS")

K. A. LEES, F.P.S.
(Head of the pharmaceutical research and development department, Glaxo Laboratories, Ltd.).

ANTIBIOTICS have made a notable contribution to the control of bacterial infections encountered in veterinary practice. Many of the products developed for human treatment are directly applicable in veterinary medicine, perhaps with adjusted doses, but their outstanding contribution is to be seen in the greatly improved prognosis for mastitis in cattle, for which numerous special formulations have been developed over a long period.

For an antibiotic to be considered seriously for an intramammary infusion, any likelihood to irritate the sensitive tissues of the udder must be tested. Having established an acceptable level of increased cell count in the milk (even the most benign infusion, e.g., saline, is likely to cause some increase in cell count), the formulator can proceed to the next stage, namely the incorporation of the antibiotic into a suitable vehicle. The unit dose of the antibiotic is determined primarily by its inherent antibacterial activity. Doses normally employed are in the range 50-500 mgm. and are usually presented in about 3 gm. of vehicle. The concentration of the antibiotic, present as powder dispersed in the vehicle, is thus hardly ever high enough for variations in the particle size of the powder to influence the viscosity of the infusion.

Antibiotic Titre in Milk

The concentration of antibiotic achieved in the milk within the udder, although greatly dependent on the dose of antibiotic, can be influenced by the character of the chosen vehicle. This is particularly true for antibiotics that are relatively insoluble and lipophilic (intramammary infusion vehicles are virtually all anhydrous oily or fatty mixtures). The titre of antibiotic is closely linked with its duration after an infusion has been made. The rate of release of procaine penicillin is particularly amenable to control by choice of vehicle. A procaine penicillin infusion formulated as a wholly hydrophobic infusion, achieved by dispersing the antibiotic in liquid paraffin gelled with metal soaps such as aluminium or lithium stearates, will yield low-antibiotic milk titres lasting for several days, in spite of intermediate milking of the udder. Such formulations are particularly suitable for the "dry" cow, which cannot be conveniently treated at the regular milking times. Concentrations of metal soap of the order of 1-10 per cent. w/w are used, but the secret of success of these formulations lies largely in the method of manufacture. Attention to details such as the overall moisture content of the system at all stages during manufacture, the rate of heating and cooling of the paraffin and soap mixture, and the precise point at which the procaine penicillin is incorporated are all vital if a suspension of uniform viscosity and behaviour in the udder is to be achieved.

Some people are exquisitely sensitive to penicillin, and milk containing traces of penicillin must be prevented from reaching the consumer. The first step in achieving that objective is to provide an intermammary infusion having a predictable rate of release of penicillin so that the farmer may be instructed to discard milk from treated udders for a given period after the last infusion. In practice infusions are now available that ensure a level of penicillin in the milk less than 0·05μ/mil sixty-four hours after the last infusion, and the farmer is thus able to avoid putting such milk on the market, though he may use it for feeding other livestock. Such a predictable release rate is achieved by selecting relatively hydrophilic vehicles (normally anhydrous to ensure satisfactorily stable potency of the antibiotic). Anhydrous vehicles also offer the best conditions for minimising any possible reaction between the infusion and the storage container, which is usually a one-dose collapsible aluminium or tin tube fitted with a nozzle suitable for easy insertion into the teat canal.

Addition of a Wetting Agent

Ready miscibility of the intramammary infusion in the udder may be achieved by adding wetting or emulsifying agents to a simple paraffin or vegetable oil base. Needless to say, the choice of wetting agent must be made with great care and tested in cattle to verify virtual freedom from irritating effects on the sensitive tissue of the udder. Generally speaking, the rate of release of antibiotic will increase with increasing concentration of wetting agent and it is possible, by means of a suitably designed *in vitro* "mechanical cow," to correlate the release rate of experimental formulations on the bench with that in the udder. A concentration of polyoxyethylene sorbitan monostearate of the order of 3 per cent. w/w added to a paraffin mixture of suitable consistency will confer a practicable degree of miscibility, encouraging the penicillin to be eliminated rapidly from the udder during 36-48 hours after infusion (I.C.I., British Patent, 876,239). Ready miscibility can also be achieved by incorporating 5 per cent. w/w emulsifying wax in a paraffin vehicle (Beecham, British Patent, 993,661).

Antibiotics that are highly soluble in water, such as sodium penicillin, are normally released rapidly from the vehicle, and the formulator will find it difficult to retard the rate signficantly. The viscosity of the infusion has to be adjusted to prevent physical sedimentation of the suspended antibiotic during storage, yet the viscosity must not be so high as to make it difficult to extrude the contents of the tube into the teat canal. Ease of use of intramammary infusion products becomes paramount when the product is used to treat a recalcitrant cow. Tubes of infusion are frequently stored in the cow byre, and the viscosity must not be greatly influenced by wide fluctuations in temperature. If the formulator can introduce an element of "structure" or thixotropy into his product, it will be found advantageous.

ONE HUNDRED YEARS AGO

MINERAL ETHER

From the C. & D., *February* 15, 1866

ALTHOUGH the commercial products furnished by coal tar are already so numerous, there appears to be scarcely any limit to the articles of utility obtainable from this abundant mine of wealth. One of the many hydrocarbons derived from this substance, and described as a "new spirit," has been recently introduced under the title of "Mineral Ether," or "Parisian Glove Cleaner." It is a limpid, colourless liquid, having a rather agreeable odour, suggestive of that of benzol, but entirely free from the disagreeable tarry smell peculiar to that liquid. It quickly volatilizes, leaving little or no perceptible odour, and is readily miscible with spirit and ether, but immiscible with water. Its boiling point is said to be 170°F, which is several degrees lower than that of benzol, and we are given to understand that its remarkable solvent properties enable it to readily and effectually remove grease, wax, and stains upon silk cloth, ribbon, velvet, and all kinds of fabrics, even those of the most delicate colours.

It reminds us greatly of some of the hydrocarbons obtainable by fractional distillation from American petroleum, and it is certainly superior to many of the benzols now offered to the public as detergents.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN

ADVICE TO MEMBERS ON "FEMALE PILLS"

1966 Charter medallists named

HAVING had regard to reports that had been published in national and provincial newspapers on so-called "female pills," the Council of the Pharmaceutical Society which met in London on February 1 and 2, approved a Law Committee recommendation to issue the following statement of advice to members:—

> PREPARATIONS FOR MENSTRUAL IRREGULARITIES
>
> THE Council of the Society have recently considered the publicity that has appeared in the national Press concerning the sale of preparations sold ostensibly for menstrual irregularities, but in fact believed by the public to be capable of terminating pregnancy. It is obvious that a woman suffering from menstrual irregularities should not indulge in self-medication but should seek the advice of a doctor. Having regard to the dangers that can result from taking these so-called "female remedies" without medical advice, the Council wish to advise all pharmacists that they should not supply any preparations for the relief of menstrual irregularities except on prescription.

Medal Awards

It was reported that the president (Mr. J. C. Bloomfield) had decided on the following recipients for the Charter medals, 1966:—

Charter gold medal ("To recognise outstanding service rendered by a member to the Society, or, generally in promoting the interests of pharmacy"): Thomas Heseltine, Normanton.

Charter silver medal ("To recognise outstanding service rendered by a member locally"): Charles McArdle, Solihull.

The medals would be presented at the annual meeting in May.

Notice had been received from the Privy Council that the alteration to Byelaws Section III had been confirmed by Order of Council on December 6, 1965.

The Organisation Committee reported that an application had been received from the Leicester Branch for permission to have the Society's arms reproduced on a piece of silver plate which it was proposed to present to the Leicester Corporation for inclusion in the collection of civic plate. The Committee saw no objection to the proposal and the recommendation was adopted.

It was reported that an Order had been received from the Privy Council appointing the following members to the Society's Council for a period of four years from January 29:—William Lane-Petter, M.A., M.B., B.Chir.; Professor M. Weatherall, M.A., D.M., B.Sc., and S. R. F. Whittaker, M.A., M.D., F.R.C.P.

THE SECRETARY and REGISTRAR reported that the following would retire in May:—*Members of Council*: Messrs. A. Aldington, J. E. Balmford, A. H. Beckett, J. C. Bloomfield, K. Holland, A. Howells and J. P. Kerr. *Auditors*: Messrs. H. Treves Brown, J. C. Hanbury, H. Jephcott, L. G. Matthews and C. C. B. Stevens.

The minutes of the meeting of the Education Committee presented by MR. C. W. MAPLETHORPE revealed that during January twenty-nine persons had been registered as "student," against fifteen in January 1965. A letter had been received from Allen & Hanburys, Ltd., stating that the company did not intend to continue offering the research fellowships once the present holders of those awards had completed their research studies. The Committee asked for a letter to be sent expressing the Society's thanks for the contributions the company had made to research in schools of pharmacy by awarding the fellowships.

The registrar of the Pharmacy Board of New South Wales had informed the Society that, under the requirements of their new Pharmacy Act, future applicants for reciprocal registration in that State would be required to produce two certificates of good character to accompany their application. The recommendations were adopted.

The Benevolent Fund Committee reported that grants had been made or were recommended to seven members, eleven widows and one student.

The minutes of the meeting of the Finance and General Purposes Committee, presented by MR. H. STEINMAN, revealed that the Committee had considered the position of members resident in Rhodesia. While some members were paying fees to the Society without difficulty, others were reported as unable to do so. The Committee had recommended that further instructions should be sent to members in Rhodesia and that, in the event of the political situation making it impossible for them to pay fees, their names should be allowed to remain on the Register on the understanding that they would be expected to remit the arrears when the situation permitted.

MR. J. B. GROSSET presented the Practice Committee's minutes and those of the general and hospital practice subcommittees. From replies to a questionnaire to Branch secretaries on matters relating to the organisation of pharmaceutical services it was felt that legislation should be sought to establish a planned distribution of pharmacies. The general practice subcommittee recommended that a motion on the subject should be submitted to the 1966 Branch Representatives' meeting (see p. 148).

Training Facilities for Hospital Pharmacists

The hospital practice subcommittee had considered the types of post-graduate training available to hospital pharmacists. Heads of schools of pharmacy were being asked to indicate their plans for formal post-graduate training and research and for specific refresher courses of short duration. It was noted that plans were now in hand for the quality control of pharmaceutical preparations to be exercised in larger hospitals and at regional level by pharmacists. The subcommittee's opinion was that a scheme for simple, quick tests for detecting errors would be a useful complement to the more formal testing procedure, and could be operated in most hospital pharmaceutical departments.

A change in the policy of a manufacturing company was reported, which indicated that the company's existing products would be offered to retailers outside of pharmacy. The Committee deplored the extension of the sale of medicines through non-pharmaceutical outlets.

The Law Committee, through Mr. Kerr, reported that during December 1965, the premises of 802 authorised sellers and 369 traders had been inspected. Proceedings had been recommended to be instituted under the Pharmacy and Poisons Act, 1933, against three authorised sellers and three traders, and letters to be sent to two traders. During the previous month warning letters had been sent to four traders in respect of the sales of preparations containing Part I poisons.

The minutes of the meeting of the Ethical Committee were presented by MR. W. M. DARLING. Action had been taken in connection with twenty Press advertisements that infringed the rules and recommendations relating to advertising. Most concerned advertisements for Christmas goods, cosmetics, or wines, in which a restricted title had been used. In all cases an assurance had been received that future advertisements would be amended. It had been pointed out, on behalf of some companies, that their registered titles included the word "Chemist" or "Pharmacy." That created difficulty in advertising, and the companies had been advised to register suitable trade names if they wished to continue advertising.

The Committee had considered correspondence and copies of the most recently published leaflets and countercards issued by a manufacturing company for distribution by pharmacists to members of the public. The Committee reaffirmed its previously expressed view that, however well intentioned a manufacturer might be, any general publicity for pharmacy that included the name of a manufacturer could be an embarrassment to the profession.

The Committee was informed of correspondence concerning the sales promotion, which included a competition and had been directed to sales assistants, of an analgesic tablet. Exception had been taken to the phrase "medically approved ingredients just like a doctor's prescription" which had been used in connection with the competition.

It was reported that a leaflet distributed to pharmacists, and which included a claim that the Committee on Safety of Drugs had approved a product for the use of children, had been withdrawn as the result of the Society's representations to the Committee. Any other instances of misuse of product clearance that came to light would be referred to the Committee on Safety of Drugs.

Objection was taken to a full page advertisement for Aspro in the *Co-operative News*, in which publicity for Aspro was linked with a branded tea. The Committee asked that the Society's objection should be conveyed to the advertising manager of the newspaper and to the manufacturers of Aspro.

The minutes were received and the recommendations adopted.

(To be concluded)

"OPEN SHOP"

By E. C. TENNER

MANY times I, and I suppose most other pharmacists, particularly when some of it has got astray and given us a frightful mess to clean up, have cursed the very existence of gentian violet, and have hoped to see the day when it was no longer used. Yet now the peculiar position has been reached when I am apparently unable to buy it. For over a month I have been trying to obtain a supply from our several local wholesalers, but with no success. The ridiculous position is that, though they no longer list the crystals, the largest of the wholesalers offer in their drug list tubes of gentian violet jelly. I wonder how they manage to make them if, as it would appear, they have no gentian violet? The question of the supply of chemicals and galenicals is undoubtedly becoming serious. We have all, no doubt, had to refuse customers seeking some of the older family recipes because one or more of the ingredients was no longer obtainable, or if obtainable was supplied only in such a large pack that it was impracticable to buy such an amount. No doubt there is a case to be made for standardised quantities, but I still feel that the drug suppliers should be prepared to supply small amounts at a suitably higher price. There is still the customer, as I recently found out, who is quite happy to pay 5s. for 100 mils, but does not want to have to take a litre at 15s. From a conversation with colleagues it would seem that even certain B.P.C. and B.N.F. preparations are now victims of what one might describe as arbitrary obsolescence on the part of the manufacturers. I have confirmed that two such items (emuls. chlorof. and lachesine chloride) are no longer obtainable from the firm which is now, for all practical purposes our only source of supply in this area. We pondered on the question of what would be the official reaction if, when the pharmacist in question received his next EC10 calling for one of those ingredients, he endorsed it "emuls. chlorof. unobtainable and omitted from the mixture." Now that we have virtually only one supplier of drugs and galenicals they are quite obviously pruning their range of preparations with little or no consideration for minority demands. We would surely do well to ponder on this problem, for it may well be a preview of the shape of things to come. Until quite recent years we had a number of drug and galenical manufacturers and wholesalers from whom we could make our purchases, and who were prepared to take a little trouble to satisfy us. Now we are reduced to one, and it is a case of take a winchester or do without. Could it be that, within the next few years, we shall be faced with a similar position in "ethicals" and "patents," and be forced to take a dozen of some slow-moving "patent" or do without?

French Pharmacists' Professional Pride

The recent article in your columns on "Pharmacy in France" (*C. & D.*, January 15, p. 65) was most interesting. I have visited that country on a number of occasions, but must admit that my knowledge of the language is not sufficient to enable me to converse with my French colleagues. Nevertheless I have observed their pharmacies closely and would compliment them on their high standard of shopfitting and general cleanliness. In view of the fact that in France the pharmacists have apparently several basic advantages denied to us, such as limitation of pharmacies, restriction of medicines to pharmacy, fixed prices, no multiple competition, etc., there would appear to be little need to observe such apparently high standards of premises, and though I note in the article that there are certain official standards in this matter, one is left with the reasonable conclusion that it must also be in some measure due to their pride in their profession.

Personal Weighing Machines

I have recently been making inquiries from our local Weights and Measures people regarding our personal weighing machine. As I expected, whilst the machine may perhaps be capable of adjustment to meet the requirements until 1970, it will then have to be scrapped. I was surprised to find that, even if I modify the mechanism so that it will operate without money, I shall still not be in order. This brings up the question of replacement and its cost. From records recently taken it is obvious that, at a penny a weigh, we cannot hope that replacement will be a reasonable business proposition in itself, so we are left to decide whether the service given to those few customers who use the machine is a sufficient matter of goodwill to justify the expense involved. Two other local shops whose machines cannot, apparently, be made fit for use even until 1970 are seriously considering abandoning them without replacement.

Illegibility by Intention

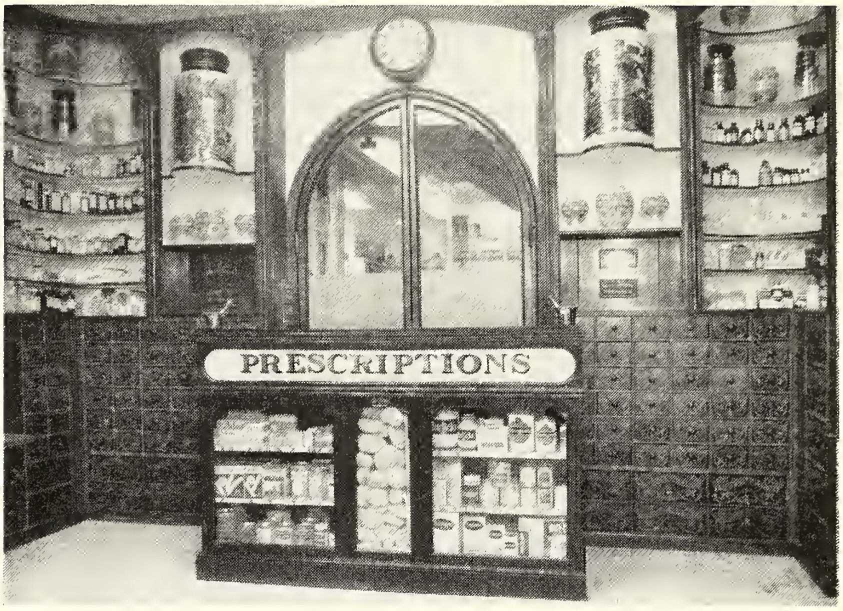
I suppose that most of us try our skill at your Prescription Posers. Sometimes we even solve them, and that reminds me of the quite deliberate posers at one time put to us by a doctor colleague, now unfortunately dead. When, occasionally, he was completely at a loss regarding the name, strength, packing, etc., of a preparation, he would write a prescription so obviously incapable of interpretation that we would have to contact him and give him the required information! Sometimes there is little to choose between the "deliberate mistake and the unintended error."

DOOR-TO-DOOR DRUGS: When we were in Dublin the chemist would send round a boy with your bottle. Here the custom has long died out. It should be revived. Perhaps the chemist could be paid through the National Health for running a delivery service. Of course it would cost the taxpayer something. But surely life and health are worth more than money.—*Glasgow Daily Record.*

An Unusual Find at Winchester

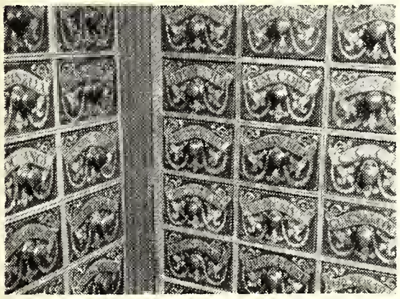
DRUG DRAWERS "REDISCOVERED"

ALTHOUGH the discovery of an "old master" during the cleaning of an oil-painting is not uncommon and many mediæval wall paintings have been revealed in the course of church restorations, it must be rare for a pharmacist to discover that his fittings, on being cleaned, were objects of rare distinction. That is precisely what happened at the pharmacy of Hunt & Co. (Winchester), Ltd., High Street, Winchester, during recent renovations of the "runs" of drug drawers. All had appeared to be the traditional nineteenth-century mahogany drawers. On reaching the two final stacks before the dispensary screen the French polishers detected a green layer showing through the superimposed varnish.



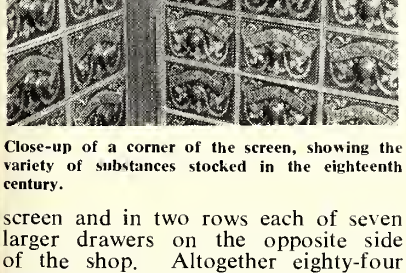
General view of the dispensing screen in the pharmacy of Hunt & Co. (Winchester), Ltd., showing the newly restored drawers *in situ*.

Closer inspection revealed that the two stacks of drawers were not of mahogany, as were the others, but of oak. When they had been carefully cleaned they were shown each to bear its title inscribed upon a scroll of gold in a design of foliage. So, in turn, were the drawers in the dispensary screen and in two rows each of seven larger drawers on the opposite side of the shop. Altogether eighty-four small and thirty-three large drawers bearing the older design were discovered. Four short and two long drawers proved beyond possibility of full restoration. They have been painted plain green to match their companions.



Close-up of a corner of the screen, showing the variety of substances stocked in the eighteenth century.

Several of the larger drawers still have their original handle: a thin iron loop. To the remainder the company has had matching handles fitted. Most interest, however, naturally attaches to the design of the drawers and the names of the substances they bear. The majority of the names are those of crude drugs, but several drawers bear the names of patent or proprietary medicines. That enables the fixtures to be tentatively dated to the latter half of the eighteenth or first decades of the nineteenth century.



Detail of a single drawer.

The patented medicines named on the drawers (with date of patent in parentheses) are:—Analeptic pills (Dr. James, 1774); James's fever powders (1747); Pike's ointment (1760). Other named proprietary medicines are Scot's pills, Ward's essence, Falck's cerate, Hickman's pills and Vandour's pills. All of the foregoing are mentioned in the schedule to the Medicines Stamp Duties Act, 1812 (52 George III c. 150), but information about the last three is scanty. They have not been traced in records in the Pharmaceutical Society's library or in other recognised source books, and their formulas are thus obscure. In the schedule to the 1812 Act two Scot's pills are mentioned — Anderson's Scot's pills and Scot's gout pills. Both were still available in 1892 when the second edition of the *C. & D.* Book "Medicine Stamp Duty" by E. N. Alpe was published.

Stocks of the Period

The names on the remaining drawers reflect the varied stock-in-trade of the eighteenth century "chymist." Some, such as Macis, Caryoph. Aromat., Aloes Barb., Aloes Socot. would be easily recognised by any present-day pharmacy student, even if forgotten by many of those who have already qualified. Some have still a use, even if a declining one (Gum Trag. Opt., P. Glycyrrh.). Others (Gum Copal, Coccinella) would be known to an older generation. Yet others (Rad. Caryoph, Bacc. Junip.) have been abandoned. A final class would appear to be more appropriate in an oil-and-colour merchant's shop (flake white, patent yellow, stone blue).

Another problem arises if an eighteenth-century date is accepted for the drawers. How did they arrive in the shop? Although records go back to 1649 for the front part of the premises, at which time it was described as a house, no "chemist and druggist" appears to have owned the building until 1850, when the whole of the present premises were sold to George Gunner for £1,600. Gunner had previously been in business in nearby St. Thomas's Street, and it is believed that the drawers were transferred from there to their present location and varnished over to match the dispensing screen and the mahogany drawers, both of which date from the middle of the last century.

An Added Distinction

On July 24, 1861, Gunner leased the premises to Richard Hunt, founder of the present company, who in 1873 purchased them outright. From that time the general *décor* has been judiciously preserved when any alterations have been made to the shop and the recent discovery forms a pleasing addition to what was an already distinctive period shop interior (the exterior was illustrated in THE CHEMIST AND DRUGGIST, June 29, 1957, p. 713).

MAKERS' ACTIVITIES

Sales Conference.—Under the chairmanship of Mr. William Scholl, the marketing conference of Scholl Manufacturing Co., Ltd., 182 St. John Street, London, E.C.1, was held recently in London. The company's representatives from throughout the country discussed with the sales manager (Mr. T. Griffith Jones) and other executives the merchandising programme for Scholl foot exercise sandals, foot aids and elastic hosiery for the 1966 season.

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, FEBRUARY 9: Shortages of many CRUDE DRUGS continued on the spot during the week.

Although a few items were again available after an absence of several weeks or months, a still larger number were cleared on the spot, and it is unlikely that they will be replaced before new crops become available. Among those again being offered on the spot were BUCHU LEAVES at 5s. per lb. and COPAIBA BALSAM at 14s. Costa Rican IPECACUANHA was firmer, and quotations for Colombian were nominal in the absence of shipment offers. VALERIAN ROOT continued scarce and dearer, with Indian and Continental varieties each up 25s. per cwt. SENEGA and American LOBELIA were both sixpence per lb. dearer. The firmer tone in GINGERS was maintained, pending Jamaican new-crop offers. Kobé AGAR was advanced at origin and spot holders, whilst advancing their quotation sixpence per lb., did not follow the whole rise. Easier per lb. were PERU BALSAM (down one shilling) and CHERRY BARK (down one penny). CALUMBA ROOT and Italian SQUILL were each down 10s. per cwt. There were a few adjustments in MENTHOL prices. but the rising trend was halted during the week.

In ESSENTIAL OILS it was difficult to find PATCHOULI on the spot, and forward offers were well above the last quoted price. PENNYROYAL was cheaper to buy on the spot than at origin, where the price was reported to be much firmer. SAGE was lower. So also were Chinese ANISE (by three-halfpence) and Ceylon CITRONELLA for shipment (by threepence) but Formosan was dearer (by twopence). Dearer also per lb. were BOIS DE ROSE (by threepence) and Madagascar CLOVE LEAF (by fourpence). Among EXPRESSED OILS there has been a much firmer tone during recent weeks, particularly in MAIZE. Whilst it has tended to make alternative oils dearer, so far OLIVE has not been affected to any great extent. Neither has ALMOND which was. in fact, a little lower in price. Because of the latter's high value it is no longer put to a lot of its former uses. Main customer is now the cosmetic industry.

Among PHARMACEUTICAL CHEMICALS at least one supplier of MAGNESIUM SULPHATE is increasing the price of the B.P. crystals and of the exsiccated powder. ISOPRENALINE SULPHATE is now 50s. per kilo lower in 5-kilo lots.

Pharmaceutical Chemicals

Where material is of foreign origin prices given below may be subject to import surcharge.

ALOIN. — Micro-crystalline, 14-lb. lots, 34s. per lb.

ALUMINIUM CHLORIDE.—Pure, in 50-kilo kegs, 6s. 1d. per kilo.

AMINACRINE HYDROCHLORIDE. — B.P. is £24 per kilo.

AMMONIUM ACETATE. — Kegs (70-kilos), B.P.C. 1949, 8s. 1d. per kilo. SOLUTION, strong, 3s. 6d. per kilo.

AMMONIUM BICARBONATE.—B.P. powder £54 10s. per ton; CARBONATE, £83 10s. for lump and £87 10s. for powder. All in 1-cwt. free kegs.

AMMONIUM CHLORIDE.—50-kilo lots pure powder, 3s. 7d. per kilo.

AMMONIUM NITRATE. — Crystals, 1s. 8d per kilo in 50-kilo lots.

AMMONIUM SULPHATE.—50-kilo lots, 2s. per kilo for B.P.C. 1934 grade.

ANEURINE.—HYDROCHLORIDE and MONONITRATE (per kilo) in one-kilo lots, 118s. 6d.; 10-kilos, 116s.

ANTIMONY SALTS. — CHLORIDE, SOL.. B.P.C., 1934, carboys, 5s. 7d. per kilo; FLAKE, 14s. 4d. per kilo.

ASCORBIC ACID.—One kilo, 37s.; 10-kilos, 41s. per kilo; 25-kilos, 33s. 6d.

BACITRACIN.—Sterile topical is 53s. per mega unit for 25 m.u.

BARIUM SULPHATE. — B.P., 50-kilo lots, 3s. 8d. to 3s. 9½d. as to package; 250-kilos from 3s. 3½d. to 3s. 5d.

BEMEGRIDE.—B.P.C. is 320s. per kilo.

BENZOCAINE.—B.P. is 13s. 2d. per lb. in 1-cwt. lots.

CAFFEINE.—HYDRATE in 50-kilo lots and over, 28s. 1d. per kilo; CITRATE, 20s. 11d.

CALAMINE.—500-kilo lots, 4s. 3¾d. per kilo; 1,000 kilo, 4s. 2¾d. kilo.

CALCIFEROL. — One-kilo lots are from 2s. 7½d. per gm. in standard packages.

CALCIUM PANTOTHENATE. — 92s. 6d. per kilo for 1 to 9 kilo lots.

CANTHARIDIN. — Per oz. 327s. 6d. for 4-oz. lots.

CARMINE.—One-cwt. lots are quoted at 180s. per lb.

CHARCOAL. — Medicinal activated, B.P.C. in 1-cwt. lots, £22 10s. per cwt.

CHLORAL HYDRATE. — One-cwt. lots quoted at 4s. 3d. per lb.

CHLOROCRESOL.—Pharmaceutical quality, 7s. 7d. per lb. (1-cwt. lots).

CHLOROFORM. — 35-litre lots in winchesters, B.P.. 11s. 5½d. per litre; in drums, 10s. 7d.; 175-litre lots, 11s. and 10s. 1½d.

CHLOROPHYLL. — Water-soluble, 100 per cent. (medicinal grade), 250s. per lb.; oil soluble, 25s. per lb.

CHLORPHENESIN. — 50-kilo lots are 72s. 6d. per kilo.

CINCHOCAINE. — HYDROCHLORIDE, B.P., is 850s. per kilo.

CYANOCOBALAMIN.—100 gm., 52s. 6d. per gm.

DICOPHANE. (DDT.) — One-ton lots, 70–74 per cent., 2s. 3d. per lb.

DIENOESTROL. — B.P. is 1s. 3d. per gm. for 5-kilo lots.

DIGOXIN.—100-gm. lots are 44s. per gm.

DITHRANOL.—B.P. offered at 6s. 9d. per oz. for 7-lb. lots.

DOMIPHEN BROMIDE. — B.P.C. grade, 32s. per lb. in 1-cwt. lots.

EMETINE. — One-kilo lots HYDROCHLORIDE, 11,431s. per kilo.

EPHEDRINE.—ALKALOID nominally 6s. 9d. per oz.; SULPHATE, 5s. 9d. and HYDROCHLORIDE, 4s. 9d. per oz.; METHYL EPHEDRINE HYDROCHLORIDE, 388s. kilo.

ERGOMETRINE.—MALEATE, B.P., 152s. per gm. for 5-gm. lots; ERGOTAMINE TARTRATE, 29s. 6d. per gm. for 100-gm. lots.

FOLIC ACID. — B.P. and U.S.P., 1-kilo lots, £19 7s. 6d. per kilo.

FORMALDEHYDE.—B.P. solutions, 5-drum lots, 710s. per ton, delivered.

HISTAMINE. — The ACID PHOSPHATE is £200 per kilo.

HOMATROPINE. — 16-oz. lots (per oz.): ALKALOID, 30s. 6d.; HYDROBROMIDE, 24s. 6d.; HYDROCHLORIDE, 28s. 6d.; METHYLBROMIDE, 25s. 6d. 7-oz. rates are 1s. 6d. per oz. above those rates.

HYDROGEN PEROXIDE.—For 27·5 per cent. by weight. £115 per ton; 35 per cent., £138.

HYDROQUINONE.—One-cwt. lots, 10s. per lb.; 1-ton, 8s. 6d.

HYDROXOCOBALAMIN.—For 100 gm. lots, 105s. per gm.

INOSITOL. — One kilo, 100s.; 10 kilos, 90s. per kilo.

ISOPRENALINE SULPHATE. — 5-kilos, 380s. per kilo.

LEAD ACETATE.—B.P. crystals. 4s. 5d. per kilo.

MENAPHTHONE. — (50-kilo lots). B.P. 112s. 6d. per kilo; ACETOMENAPHTHONE, B.P., 122s. 6d.; WATER-SOLUBLE (menadione sodium bisulphite), 81s.

MERSALYL. — ACID, 250s. per kilo; SODIUM, 340s.

METHYL SALICYLATE. — Five-ton lots 3s. 2d. per lb.; 1-ton, 3s. 2½d.; 10-cwt., 3s. 3d.; 5-cwt., 3s. 6d.; 1-cwt., 3s. 8d.

METHYL TESTOSTERONE. — Per kilo, £95.

NEOMYCIN. — SULPHATE, B.P., 590s. per kilo; 5-kilos, 550s. per kilo.

NICOTINAMIDE. — (Per kilo.) One kilo, 42s.; 10 kilos, 39s. 9d.; 50 kilos, 37s. 9d.

NICOTINIC ACID. — One kilo, 32s.; 10 kilos, 29s.; 50 kilos. 27s. per kilo. Feed grade, 21s. to 23s. kilo as to quantity.

NIKETHAMIDE.—50-kilo lots are 52s. 9d. per kilo.

OESTRADIOL. — MONOBENZOATE, 14s. 6d. per gm.

D-PANTHENOL.—One to 10 kilos, 200s. per kilo.

PARACETAMOL. — One-ton lots are 10s. 2d. per ton.

PARALDEHYDE. — B.P. in 12-winchester lots, 2s. 10d. per lb. (6s. 3d. kilo); 10-gall. carboys, 2s. 4d.

PHENACETIN.—B.P. one-ton lots, 6s. 3d. per lb.; 1-cwt., 6s. 9d.

PENICILLIN. — SODIUM, POTASSIUM or PROCAINE, 2·25d. per mega for 5,000 megas.

PYRIDOXINE. — One kilo, £22 10s. per kilo; 10 kilos, £21 17s. 6d. per kilo.

RIBOFLAVINE. — One-kilo, 217s. 6d. and 10 kilos, 212s. 6d. per kilo.

SANTONIN.—5-kilo lots, 320s. per kilo.

SODIUM PANTOTHENATE.—Per kilo, 105s. for 1 to 9 kilo lots.

STREPTOMYCIN — BASE or SULPHATE 2·85d. per gm. base.

TETRACYCLINE. — HYDROCHLORIDE 25-gm. lots, 79s. 2d. (hospitals only).

VITAMIN A. — Synthetic. Supplied in concentrate 1 million international units per gm. as acetate and oil-soluble palmitate at 2⅞d. per m.i.u. for 10,000 m.i.u. lots. Acetate in dry powder, 325,000 i.u./gm., 87s. 6d. kilo; 500,000 i.u./gm., 125s. kilo.

VITAMIN D. — D_2 powder for tableting 850,000 i.u. per gm. 125s. per kilo; in oil, 1 million i.u. per gm. 67s. 6d. per kilo for 100,000 m.i.u. Crystalline: see under calciferol. D_3 in oil (1 mega per gm.), threepence per mega for less than 100-gm. ampoule.

VITAMIN E.—Natural *d* alpha tocopheryl acid succinate, hydrogen salt, 1,210 i.u., 25 gm. lots, 9d. per gm.; 100 gm., 8d.; 1 kilo, £25. Synthetic *dl*, 1,000 units per gm., the prices are 8d., 5d. and £18 for the same quantities.

Crude Drugs

Aconite. — Spot, Spanish *napellus*, 2s. 4d. per lb.; shipment, 2s. 3d., c.i.f.

Agar. — Kobé No. 1, 13s. 6d. per lb. in bond; shipment, 14s., c.i.f. Spanish nominal on the spot at 16s., duty paid.

Aloes. — (Per cwt.). Cape primes, spot, 260s.; shipment, 255s., c.i.f., and Curaçao, 265s. spot; shipment, 260s., c.i.f.

Balsams. — (Per lb.): Canada: lower grade 32s. 6d. spot nominal. Copaiba: b.p.c. spot, 14s. Peru: 25s., spot; shipment, 22s., c.i.f. Tolu: b.p., from 12s. 6d to 35s.

Belladonna.—Leaves, 6s. per lb., spot; shipment, 5s. 6d., c.i.f. Root, 1s. 8d. per lb., spot; shipment, 1s. 7d., c.i.f.

Benzoin.—Sumatra block, spot from £20 to £40 per cwt. as to quality.

Buchu.—Spot, 5s. per lb.; shipment, 4s. 10d., c.i.f.

Calumba.—Mozambique root, 130s. per cwt. spot.

Cardamoms.—(Per lb.). Alleppy greens, spot, 31s. Shipment, 30s., c.i.f. quoted. Ceylon greens, 31s. 6d., spot and 32s., c.i.f. Prime seed, none available spot; 35s. 6d., c.i.f.

Cascara. — Spot, 225s. per cwt.; shipment, 216s., c.i.f.

Cassia. — *Lignea*, whole for shipment, 230s. cwt., c.i.f.

Cherry bark. — Thin natural, 2s. 7d. per lb.; shipment, 2s. 5d., c.i.f.

Chillies.—Zanzibar, spot 460s. per cwt. Mombasa, 510s., spot.

Cinnamon.—Bark, Seychelles, 165s. cwt. spot; shipment, 127s. 6d., c.i.f.; quills, Ceylon (per lb., c.i.f.); 4 O's, 10s.; single O, 9s. 4d.; quillings, 5s. 3½d.

Cochineal. — (Per lb.). Canary Isle silver-grey, 17s. 6d.; forward, 16s. 3d. landed; black-brilliant, 18s. 6d.; forward, 19s. 3d. landed. Peruvian silver-grey, 14s. 6d.

Ergot. — Portuguese—Spanish, spot, 13s. 6d. per lb.; shipment, 13s., c.i.f., nominal. Continental, 9s. 6d., spot.

Gentian. — Root, 185s. per cwt. spot; shipment, 180s., c.i.f.

Ginger.—(Per cwt.). Nigerian split, 90s. spot; 85s., c.i.f., for shipment; peeled, 210s. spot and 185s., c.i.f. African, spot, 240s. per cwt. Jamaican No. 3, spot, 380s., shipment, March–April, 365s., c.i.f.; Cochin, spot, 280s.; shipment, 255s., c.i.f.

Gum acacia.—Kordofan cleaned sorts, 162s. 6d. per cwt., spot; shipment, 152s., c.i.f.

Honey. — (Per cwt.). Australian light amber, spot, 115s. to 120s.; and medium amber, 105s. to 110s.; Argentine, 115s. to 120s.; Canadian, 175s. to 180s.; Mexican spot, 115s. to 120s.

Ipecacuanha. — Matto Grosso for shipment, 53s. per lb., c.i.f. and spot, 55s. Costa Rican, 69s., spot; shipment, 66s., c.i.f. Colombian, spot, 55s. nominal; shipment not offering.

Jalap.—Mexican whole bulbs, 4s. 6d., per lb. on spot; shipment, 4s. 3d. Brazilian, 1s. 8d. per lb. spot.

Karaya.—No. 1 f.a.q. gum, spot, 415s.; No. 2, 300s. per cwt.

Kola nuts. — West African halves are 8d. per lb. on the spot. Good quality replacements scarce.

Lanolin. — Anhydrous b.p. is from 2s. 6d. to 2s. 10d. per lb. in 1-ton lots delivered free drums. Commercial grades from 1s. 9½d.

Lemon peel.—Spot, 1s. 9d. per lb.: partially extracted, 1s.

Lime flowers.—Spot short at 2s. 2d. per lb.

Linseed. — Whole, 72s. 6d. per cwt.; crushed, 110s.

Lobelia.—Dutch on the spot, 4s. 9d. per lb.; shipment, 4s. 6d., c.i.f. American, 13s. per lb. spot.

Menthol.—(Per lb.). Chinese for shipment, 34s. 9d., c.i.f.; spot, 35s. in bond (39s. 6d., duty paid); Brazilian for shipment, 39s., c.i.f.; spot, 39s., in bond.

Nutmegs.—(Per lb.). West Indian, spot, 80's nominal; sound unassorted, 10s. 6d. East Indian for shipment b.w.p., 5s. 8d., c.i.f.

Nux vomica.—Cochin, 110s. per cwt. on the spot; shipment, 80s., c.i.f.

Orange peel. — Spot: Sweet ribbon, 1s. 8d. per lb., bitter quarters: West Indian, 10½d.; Spanish, 1s. 9d.

Pepper. — White Sarawak spot, 4s. 5½d. per lb.; shipment, 4s. 3d., c.i.f. Black Sarawak, 3s. 3d., spot; shipment, 3s. 2d., c.i.f. Black Malabar spot not available, shipment, 362s., c.i.f.

Pimento. — No offers on spot or for shipment.

Quillaia.—For shipment, 150s. per cwt. c.i.f.; spot, 150s.

Saffron.—Mancha superior, spot, 725s. per lb.; Rio, 700s.

Sarsaparilla. — Jamaican native red, spot, 3s. 6d. per lb.; shipment, 3s. 3d., c.i.f.

Seeds. — (Per cwt.). Anise.—Spanish, 240s.; Turkish, 185s., both duty paid. Caraway.—Dutch, 170s., spot. Celery.—Indian, 170s., spot; shipment, 142s. 6d., c.i.f. Coriander.—Moroccan, 65s.; Rumanian whole, 61s. and splits, 52s. 6d., all duty paid; shipment, Moroccan, 54s., c.i.f. Cumin. — Cyprian, 355s., Indian, 325s., Moroccan 350s., duty paid. Syrian, 310s., in bond; shipment, Cyprian, 310s., c.i.f. Indian, 250s., c.i.f. Moroccan, 310s. Dill.—Indian on spot in short supply at 130s.; shipment, 97s. 6d., c.i.f. Fennel. — Chinese, 125s., duty paid; shipment: Chinese, 115s., c.i.f. Indian easier at 130s., c.i.f. Fenugreek. — Moroccan, 65s., duty paid; shipment, 52s. 6d., c.i.f. Mustard.—English, 69s. to 95s. according to quality.

Senega.—Spot 22s. per lb.

Senna. — (Per lb.). Tinnevelly leaves spot; Prime No. 1, 2s.; No. 3, f.a.q., 1s. Shipment: No. 3, 1s., c.i.f. Pods: Tinnevelly hand-picked, 1s. 8d. to 2s. as to quality: spot, manufacturing, 1s. 1d.; shipment, 11d., c.i.f. Alexandria pods: Hand-picked from 6s. to 8s.; manufacturing, forward, 2s. 3d., c.i.f.; spot. 2s. 6d.

Slippery elm bark. — Spot offered at 4s. 6d. per lb.

Squill.—Italian, spot, 135s. per cwt ; shipment, 110s., c.i.f.

Stramonium.—Continental leaves, 85s. per cwt., spot.

Styrax.—Spot, 15s. per lb. nominal.

Tonquin beans.—Para, spot, 5s. 6d. per lb.; shipment, 5s. 6d., c.i.f.

Tragacanth.—Ribbon, No. 1, £175 per cwt.; No. 2, £160.

Turmeric. — Madras finger, spot, 125s. per cwt.; shipment, 105s., c.i.f.

Valerian root.—Indian, spot, 300s. per cwt. nominal; shipment not offered. Continental root at 300s. to 305s., c.i.f.; spot, 350s.

Vanillin. — (Per lb.). 5-cwt. lots, 21s. 6d.; 1-cwt., 21s. 9d.; 56-lb., 22s.; small quantities, 22s. 6d. All plus temporary import surcharge.

Waxes. — (Per cwt.). Bees' — Dar-es-Salaam, 430s., shipment, 403s., c.i.f., Sudanese, spot, 400s., in bond; shipment, 365s., c.i.f. Candelilla, spot, 465s.; forward, 460s., landed. Carnauba, fatty grey, spot, 280s.; shipment, 245s., c.i.f.; prime yellow spot, 580s.; shipment, 477s. 6d., c.i.f.

Witch hazel leaves.—Spot quotations are 3s. 6d. per lb.; prompt shipment, 3s. 4d., c.i.f.

Essential and Expressed Oils

Almond.—Spanish sweet oil is 6s. 9d. per lb. spot.

Anise. — Chinese, 9s. 1½d., spot, shipment, 8s. 10d., c.i.f.

Bois de rose.—Brazilian spot. 16s. 6d.: shipment, 16s., c.i.f.

Buchu.—Spot, from 280s. to 360s. per lb.

Cade. — Spanish from 2s. per lb. for drum lots.

Camphor, white. — Chinese for shipment, 4s. 6d., c.i.f., per kilo; spot, 2s. 7½d. lb., duty paid.

Cananga.—Spot from 45s. to 50s. per lb.

Cassia.—Spot from 55s. per lb. for 80–85 per cent.

Citronella. — Ceylon, spot, 4s. 7½d.; shipment, 4s. 4d. per lb., c.i.f. Formosan 4s. 8d., in bond and 4s. 8d., c.i.f. Chinese 4s. 5d., in bond; 4s. 5½d., c.i.f.

Clove.—Madagascar leaf for shipment, 6s. 1d., c.i.f., spot, 6s. 1½d., in bond. Rectified, 10s. Distilled bud oil, English, b.p., 26s. per lb. for 1-cwt. lots.

Cubeb.—Spot supplies of imported are 86s. per lb.

Fennel. — Spanish sweet, 16s. per lb., duty paid.

Geranium. — Bourbon, 87s. 6d. to 92s. 6d., spot.

Juniper. — B.P.C. is 32s. 6d. per lb. Juniper wood, from 6s.

Lavender spike. — From 40s. per lb. on the spot.

Lemon.—Sicilian from 26s. to 36s.

Lemongrass. — Spot, 30s. per kilo; shipment, 29s. 6d., c.i.f.

Nutmeg.—East Indian b.p. oil is about 73s. 6d. per lb. English distilled, 110s.

Olive. — For shipment; Spanish, £230-£240 per metric ton, f.o.b. Spanish port, Tunisian, £240 to £250 per metric ton, c. and f., London. Spot, £295 to £300 per long ton, in drums, ex wharf.

Patchouli. — Spot nominal; shipment, 120s. per lb., c.i.f.

Pennyroyal. — Spot, 15s. per lb. duty paid; forward position is firmer at 17s., duty paid.

Peppermint.—(Per lb.) *Arvensis:* Chinese for shipment offered at 13s. 9d.; c.i.f. and spot, 13s. 9d. Brazilian for shipment, 14s. 9d., c.i.f.; spot, 15s. *Piperita:* Italian spot, 72s.; forward shipment, 82s. 6d. American from 39s. to 49s., as to source.

Sage.—Spanish, 22s. per lb.; Dalmatian, 26s.

Sandalwood. — Mysore, spot, 108s. per lb. East Indian for shipment, 108s., c.i.f.

Spearmint.—American oil on the spot, 63s. to 67s. 6d. per lb. Chinese, 83s. per kilo, c.i.f.

Tangerine.—Sicilian best quality about 42s. 6d. per lb.

Thyme.—Red, 29s. 6d. per lb. for 45–50 per cent., duty paid.

Vetivert.—Bourbon, spot, 85s. to 90s. per lb.

Ylang ylang. — Best oil quoted about 135s.

UNITED STATES REPORT

New York, February 8: Mexican crude Sulphur was raised $5 to $33·50 per ton. Spanish Saffron rose $5 per lb. to $105 and Clove leaf oil to $1·20 (from $1·10). Among the Essential Oils Pimento also rose ten cents to $3·55 per lb. and Lemongrass to $2 against $1·75 previously. Kobé Agar No. 1 at $2·40 per lb. was up from $2·35 but Peru balsam declined 25 cents to $3·50 per lb.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," January 26

For soap, talcum powder, brilliantine and after-shave lotion, all being goods for sale in the United Kingdom (3)
TEN PIN, 881,798, by Cussons Sons & Co., Ltd., Kersal, Manchester, 7.

For soaps, perfumes, essential oils, cosmetics, preparations for the hair, non-medicated toilet preparations and dentifrices (3)
Device with words MONICA SMART, 884,203, by Monica Smart Cosmetics, London, S.E.1.

For non-medicated toilet preparations (3)
TOUCHE, 884,421, by Thornton & Ross, Ltd., Linthwaite, Huddersfield, Yorks.

For perfumes; cosmetics in cream or in liquid form; shampoos; non-medicated bubble bath preparations; talcum powders and face powders (non-medicated) (3)
INCA GOLD, 884,476, by Beauty Without Cruelty, Ltd., London, W.1.

For essential oils (3)
ISOTRACT, 884,479, HUMOTRACT, 884,481, by Chas. Pfizer & Co., Ltd., New York, U.S.A.

For soaps (3)
FUZZY WUZZY, 885,103, by Aerosol Corporation of America, Wellesley Hills, Massachusetts, U.S.A.

For homœopathic first-aid outfits sold complete, and homœopathic first-aid remedies being pharmaceutical preparations (5)
Device with words HOMŒOPATHIC 1ST AID OUTFIT, 857,900, by Blue Rose Products, Lusaka, Zambia; Merrivale, Natal, South Africa; and Motherwell, Scotland.

For pharmaceutical, veterinary and sanitary substances (5)
BITUPAL, 869,201, by Dunster Laboratories, Ltd., Rochdale, Lancs.

For medicated ointment for sale in Keighley, Yorks (5)
GOLDEN EASE, B870,461, by Keighley Health Stores, Keighley, Yorks.

For deodorants (5)
DU LUNDI, 872,137, by Beecham Group, Ltd., Brentford, Middlesex.

For all goods (5)
PALMASPERSE, 872,757, by Roche Products, Ltd., Welwyn Garden City, Herts.

For epsom salts tablets (5)
Device with words KEST BRAND EPSOM SALTS TABLETS, B873,575, by Astrem, Ltd., London, W.1.

For pharmaceutical, veterinary and sanitary preparations and substances (5)
EFCORTESOL, 875,401, by Glaxo Laboratories, Ltd., Greenford, Middlesex.

For insecticides and herbicides, germicides and sterilising agents (disinfectants), but not including fumigatory preparations or any goods of the same description as fumigatory preparations (5)
ETOXIAT, 875,855, by Deutsche Gesellschaft fur Schadlingbekampfung, G.m.b.H., Frankfurt, Germany.

For insecticides, fungicides, preparations for killing weeds and destroying vermin, but not including preparations for destroying voles (5)
ACREX, 877,610, by Murphy Chemical Co., Ltd., Wheathampstead, Nr. St. Albans, Herts.

For pharmaceutical preparations and substances for the treatment of corns, warts and the like; corn and wart plasters and pads (5)
Device with word DIAMOND, 878,792, by Cupal, Ltd., Blackburn, Lancs.

For pharmaceutical, veterinary and sanitary preparations and substances; disinfectants; infants', invalids' and dietetic foods; preparations for killing weeds and destroying vermin (5)
BRANETS, B879,550, by Glaxo Laboratories, Ltd., Greenford, Middlesex.

For pharmaceutical and sanitary substances; bandages; and plasters and tapes, all for surgical or curative purposes (5)
SELLOTAPE, 879,860, by Adhesive Tapes, Ltd., Bristol.

For pharmaceutical preparations and substances for human and veterinary use (5)
SLO-KEE, B879,902, by CIBA, Ltd., Basle, Switzerland.

For cotton wool, lint, cotton bandages and absorbent gauze packs, all being dressings for surgical and medical use; but not including sanitary towels or diaper pads or any goods of the same description (5)
Device with word LAMBI, 879,567, by Frank Sammeroff, Ltd., Glasgow, C.5.

For veterinary vaccines (5)
COOPAVAX, 880,298, by Cooper, McDougall & Robertson, Ltd., Berkhampstead, Herts.

For pharmaceutical preparations and substances for veterinary use (5)
GLENMOUNT, 880,631, by Imperial Chemical Industries, Ltd., London, S.W.1.

For medicinal and pharmaceutical preparations and substances, all for internal human use (5)
PHIN, B882,683, by International Generics, Ltd., London, E.C.4.

For preparations for killing weeds and destroying vermin (5)
KONESTA, 882,792, by N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo (O.V.), Netherlands. ROGORFLY, 883,744, by Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy.

For pharmaceutical and medical preparations and substances (5)
NEFATROL, 883,557, by Wellcome Foundation, Ltd., London, N.W.1.

For euthanasia preparations for veterinary purposes (5)
HEWLETHAL, 883,788, by Astra-Hewlett, Ltd., Watford, Herts.

For plastics specially prepared for use in the manufacture of dentures (5)
CARNODONT, 884,006, by Farbenfabriken Bayer, A.G., Leverkusen, Germany.

For pharmaceutical and chemico-pharmaceutical products (5)
SEPEPHARM, 884,413, by Seperic, S.A., Morat, Switzerland.

For sets of manicure implements (complete) (8)
SCINTILLEX, 879,337, OLYMPIA, B879,339, by British Xylonite Co., Ltd., London, E.4.

For flash lamps and dark room lamps, all being apparatus for use in photography (9)
AIR-LUME, 860,381, by Thorn Electrical Industries, Ltd., London, W.C.2.

PATENTS

COMPLETE SPECIFICATIONS ACCEPTED

From the "Official Journal (Patents)," January 19

Colostomy, ileostomy and ureterostomy appliance. J. L. Russel. 1,021,145.

Stabilising of the wax-fat coatings of pharmaceutical forms. Smith Kline & French Laboratories. 1,021,178.

Photographic materials containing colloidal substances and their use in photographic processes. Eastman Kodak Co. 1,021,191.

Triazinylaminostilbene sulphonic acid derivatives. Hickson & Welch, Ltd. 1,021,193.

Amino acids and means for producing the same. Parke, Davis & Co. 1,021,196.

Progesterone derivatives and preparation thereof. E. Merck, A.G. 1,021,198.

Photographic material. Agfa, A.G. 1,021,199.

Organotin compounds. Stauffer Chemical Co. 1,021,200.

Suturing instrument. Canadian Patents & Development, Ltd. 1,021,207.

Isovaleric acid ester sedative and a process for its isolation. Kali-Chemie, A.G. 1,021,217.

Stereoscopic ciné film projector. K. Kohler. 1,021,235.

Device for threading the leading portion of a cinéfilm in ciné projectors. Y. Sakaki. 1,021,267.

Vaccine for the treatment of avian leukosis complex. Abbott Laboratories. 1,021,271.

Anæsthetic compositions. Imperial Chemical Industries, Ltd. 1,021,275.

Medicinal composition and method for the treatment of acne and acne sequelæ. R. B. Saperstein and W. K. Stiefel. 1,021,276.

Phenyl-substituted heterocyclic phosphorus acid esters. Farbenfabriken Bayer, A.G. 1,021,384.

Derivatives of 2*-oxo-*2*H-*1,4*-benzoxazine.* Upjohn Co. 1,021,385-86, 1,021,530.

Derivatives of 16α*-ethynyl-*19*-nor-androst-*1,3,5(10)*-triene, pharmaceutical compositions thereof and process for their preparation.* Roussel-Uclaf. 1,021,390.

Sulphonamide. CIBA, Ltd. 1,021,395.

Antibiotics and processes for their manufacture. Scherico, Ltd. 1,021,401-03.

Preparation of alkyl tin compounds. Pure Chemicals, Ltd. 1,021,426.

Process for the production of ammonium nitrate and dicalcium phosphate. Chemische Fabrik Kalk, G.m.b.H. 1,021,433.

Razor blade and method of making same. Gillette Co. 1,021,473.

Alkyl phosphonothioates and pesticidal compositions containing them. Imperial Chemical Industries, Ltd. 1,021,511.

Ferrichysin and desferrichysin and their production. CIBA, Ltd. 1,021,513.

*Substituted bis(*4*-thiazolidinones) and preparation thereof.* Warner-Lambert Pharmaceutical Co. 1,021,514.

Benzenesulphonyl urea compounds. Kyonin Seiyaku, K.K. 1,021,515.

2*-Quinolone derivatives.* Imperial Chemical Industries, Ltd. 1,021,522.

9*-Aminoalkyl and* 9*-aminoalkylidene derivatives of acridan.* Smith Kline & French Laboratories. 1,021,523.

Derivatives of acridan. Smith Kline & French Laboratories. 1,021,524.

Isoquinolines and process for preparing them. CIBA, Ltd. 1,021,525-26.

Photographic material. Eastman Kodak Co. 1,021,564.

Dispensers aerosol devices. A. S. L. Owensmith. 1,021,586.

Clamping devices. Down Bros. and Mayer & Phelps, Ltd. 1,021,589.

Production of bromine. Kuhlmann Etablissements. 1,021,613.

British patent specifications relating to the above will be obtainable (price 4s. 6d. each) from the Patent Office, 23 Southampton Buildings, Chancery Lane, London, W.C.2, from March 2.

From the "Official Journal (Patents)," January 26

Emulsifiable waxes. Eastman Kodak Co. 1,021,701.

Pilferproof closures for bottles, jars and like containers. Metal Box Co. of India, Ltd. 1,021,712.

Production of metabolites by micro-organisms. Consolidated Laboratories, Inc. 1,021,721.

Inhaler. Merck & Co., Inc. 1,021,739.

Photographic apparatus. International Polaroid Corporation. 1,021,752.

Process for the manufacture of highly pure phenol. Mitsui Petro-Chemical Industries, Ltd. 1,021,759.

Capillary chromatographic column. Bodenseewerk Perkin-Elmer & Co., G.m.b.H. 1,021,765.

Variable magnification binoculars. K. Kajiro. 1,021,777.

Bed-pans. National Research Development Corporation and H. A. Doherty. 1,021,831.

Fumaramic acid derivatives. Merck & Co., Inc. 1,021,858.

Aerosol. S. C. Johnson & Son, Inc. 1,021,886.

Method of preparing sustained release tablets. Smith Kline & French Laboratories. 1,021,924.

1α*-methyl-corticoids and a process for their manufacture.* Schering, A.G. 1,021,934.

6*-Amino-*5*H-dibenzo(d,f)* (1,3) *diazepine compounds.* Mead Johnson & Co. 1,021,941.

Organo-mercury derivative. Distillers Co., Ltd. 1,021,942.

*N-Alkyl and N-aralkyl-*3*-phenyl-*3*-(o-hydroxyphenyl) -* 2 *- tetrahydrofuranoneimines.* Abbott Laboratories. 1,021,943.

Naphthalene compounds and process for their manufacture. CIBA, Ltd. 1,021,947.

Preparation of 2*-[*2*-(*5*-nitro-*2*-furyl)-vinyl]-pyridine-N-oxides.* Dainippon Pharmaceutical Co., Ltd. 1,021,949.

Quinoline derivatives. Rhone-Poulenc, S.A. 1,021,950.

Aqueous cleaning compositions. Dow Chemical Co. 1,021,957.

Compositions comprising cinnarizine and cyclizine or chlorocyclizine. Nederlandsche Combinatie Voor Chemische Industrie, N.V. 1,021,959.

Process for preparing 5′*-nucleotides.* Ajinomoto Co., Inc. 1,021,962.

Insect-proof closures. D. Selby. 1,021,967.

British patent specifications relating to the above will be obtainable (price 4s. 6d. each) from the Patent Office, 23 Southampton Buildings, Chancery Lane, London, W.C.2, from March 9.

PRINT AND PUBLICITY

PUBLICATIONS

Booklets and leaflets

Albright & Wilson, Ltd., 1 Knightsbridge Green, London, S.W.1: Organisation chart incorporating all the major companies of the Albright & Wilson Group.

British Cellophane, Ltd., Henrietta House, 9 Henrietta Place, London, W.1: BCL tumble wrapping aid (6-p. booklet).

Cement Marketing Co., Ltd., Whiting Division, Portland House, Stag Place, London, S.W.1: Snowcal whiting manual (33-p. booklet).

Daniels (B.B.A.), Ltd., Burnham Road, Dartford, Kent: Daniels-Penchem fractionators (8-p. booklet).

William Freeman & Co., Ltd., Suba-seal Works, Staincross, Barnsley, Yorks: "Suba-seal . . . the world's biggest name in hot-water bottles" (6-p. folder).

International Chemical Co., Ltd., Chenies Street, London, W.C.1: "It's all yours, beauty for you . . . Anne French" (24-p. booklet).

Seals, Ltd., 21 Battersea Bridge Road, London, S.W.11: Speedo packaging protection and sealing equipment (leaflet).

Westbrook Lanolin Co., Subsidiary of Woolcombers, Ltd., Daisy Bank, Duckworth Lane, Bradford, 9, Yorks: "Golden Dawn liquid lanolin ISO" (information sheet).

Catalogues and Lists

Albright & Wilson, Ltd., 1 Knightsbridge Green, London, S.W.1. General chemicals department list of products, 1966 (pp. 19).

Cambrian Chemicals, Ltd., Macks Road, London, S.E.16: Ajinomoto amino acids, amino acid esters, CBZ-amino acids. Arapahoe Chemicals, Inc. price list. Pharma Waldhof price list. Cerac Crucibles price list.

CIBA Laboratories, Ltd., Horsham, Sussex: Price list of pharmaceutical preparations (8-p. folder).

Sangers, Ltd., Tolmers Square, London, N.W.1: Sangers, Ltd., group catalogue and price list, 1966 (pp. 187).

COUNTER CARD: A new display-piece for Maws children's cough linctus Tancolin. The three-dimensional showcard, size 12 x 10 in., holds pack and bottle, and the colours (tangerine and forest green) suggest the flavour and smoothing quality of the product. Makers are Maws Nursery Products, Aldersgate House, Barnet, Herts.

WILLS

Mr. J. McKeever, M.P.S.I., Watergate Street, Navan, co. Meath, Irish Republic, left estate in England and the Republic of Ireland valued at £16.786.

Mr. W. G. Manfield, M.P.S., 91 Gunnersbury Avenue, London, W.5, left £8,864 (£7,975 net).

Mr. H. H. Metcalfe, M.P.S., Glenbrae, The Village, Prestbury, Ches, left £6,426 (£4,843 net).

Mr. J. R. Moore, M.P.S., 335 Greenford Road, Greenford, Middlesex, left £27,794 (£27,692 net).

Mr. B. H. Newton, M.P.S., 35 Norland Avenue, Hull, Yorks, left £40,844 (£40,521 net).

Mr. R. Nottingham, M.P.S., The Shieling, Spratton, Nothants, left £20,283 (£19,087 net).

Mr. J. F. Ward, M.P.S., 91 Belvedere Court, London, S.W.15, left £1,832 (£1,500 net).

Mr. W. H. Williams, M.P.S., 47 Cwmavon Road, Blaenavon, Mon, left £28,898 (£28,075 net).

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Monday, February 14

Nottingham Branch, Pharmaceutical Society, Design centre, Nottingham, from 10 a.m. until 8 p.m. "Medicines—With Care exhibition." Until February 19.

Romford Branch, Pharmaceutical Society, Golden Lion hotel, Romford, at 7.45 p.m. Discussion of arrangements for holding the "Medicines—With Care" exhibition. Also Mr. K. Holland (a member of Council) on "Present Trends in Pharmacy."

Tuesday, February 15

Brighton and Hove Branch, Pharmaceutical Society, Langford's hotel, Third Avenue, Hove, at 8 p.m. Formulation of Branch resolutions.

East Kent Branch, Pharmaceutical Society, County hotel, Canterbury, at 7.45 p.m. Speaker from Consumers' Association.

East Metropolitan Branch, Pharmaceutical Society and West Ham Association of Pharmacists, Eagle hotel, 73 Hollybush Hill, London, E.11, at 8 p.m. Preview of 1966 sunglass models, details marketing programme and film by Polaroid (U.K.), Ltd.

Hull Chemists' Association, Queen's hotel, George Street, at 8 p.m. Slide evening.

Mansfield Branch, Pharmaceutical Society, Swan hotel, Mansfield, at 7.45 p.m. Mr. A. Howells (a member of Council) on "Current Pharmaceutical Topics."

School of Pharmacy, Chelsea College of Science and Technology, Manresa Road, London, S.W.3, at 7.15 p.m. Professor E. Boyland (Chester Beatty Research Institute) on "Metabolism of Carcinogenic Substances."

School of Pharmacy, Robert Gordon's Institute of Technology, Aberdeen, at 2.15 p.m. Professor Yves Cohen (faculty of Pharmacy, University of Paris) on "Metabolism of Medicaments."

South-East Metropolitan Branch, Pharmaceutical Society, Fox on the Hill hotel, Denmark Hill, London, S.E.5, at 8 p.m. Dr. E. J. Shellard (reader in pharmacognosy, Chelsea College of Science and Technology) on "The Search for Plants that Heal" (illustrated).

Tees-side Branch, Pharmaceutical Society, Corporation hotel, Corporation Road, Middlesborough, at 7.45 p.m. Mr. G. W. Humphreys on "Pills and Potions."

West Hertfordshire Branch, Pharmaceutical Society, "Goonhilly," Shothanger Way, Bovington, at 10.30 a.m. Coffee morning at which it is proposed to form a ladies' committee.

West Kent Branch, Pharmaceutical Society, Bull's Head hotel, Chislehurst, at 8 p.m. (1) Formulation of Branch resolutions. (2) Film.

West Middlesex Chemists' Association, Vestry Hall, Ranelagh Road, London, W.5, at 8 p.m. Mr. S. F. Hall (pharmaceutical assessor, Committee on Safety of Drugs) on "Assessment of Drug Safety Today."

Wednesday, February 16

Bournemouth Branch, Pharmaceutical Society, Post-graduate medical centre, Palmerston Road, Boscombe, at 1 p.m. Mr. K. S. Mullard on "Hiatus Hernia." At Guildhall suite, Langham hotel, Bournemouth, at 7.30 p.m. Annual dinner and dance.

Downland Section, Royal Institute of Chemistry, Fullers' Earth Union, Redhill, Surrey, at 7 p.m. Dr. V. A. Petrow on "Birth Control Pills."

Exeter Branch, Pharmaceutical Society, Imperial hotel, Exeter, at 7.30 p.m. Annual dinner and dance.

Isle of Wight Branch, Pharmaceutical Society, Oasis Ballroom, Ryde, at 7.30 p.m. Sherry evening (arranged by John Harvey & Sons, Ltd., Bristol).

London Branch, Guild of Public Pharmacists, Auditorium, Wellcome Buildings, 183 Euston Road, London, N.W.1, at 7 p.m. Dr. L. P. Garrod (emeritus professor of bacteriology, University of London) on "Combinations in Antibacterial Chemotherapy."

Scottish Department, Pharmaceutical Society of Great Britain, 36 York Place, Edinburgh, at 8 p.m. Professor Yves Cohen (faculty of pharmacy, University of Paris) on "Metabolism of Medicaments."

Society of Chemical Industry, Main physics lecture theatre, Imperial College of Science and Technology, Prince Consort Road, London, S.W.7, at 3 p.m. Dr. G. G. F. Newton (Sir William Dunn School of Pathology, Oxford), Dr. A. G. Long (Glaxo Research, Ltd.) and Dr. P. W. Muggleton (Glaxo Research, Ltd.) on "The Cephalosporin Story."

Thursday, February 17

Bedfordshire Branch, Pharmaceutical Society, White Hart hotel, Ampthill, at 7.45 p.m. Mrs. D. Munday (vice-chairman, Abortion Law Reform Association) on "The Abortion Law and its Reform."

Chelsea Pharmacy Association, Chesil Galleries, King's Road, London, S.W.3, at 7.30 p.m. Annual ball.

Department of Pharmacy, Liverpool College of Technology, Byrom Street, Liverpool, 3, at 8 p.m. Mr. J. R. Dale (chief inspector, Pharmaceutical Society) on "The Code of Ethics and the Work of the Society's Inspectors."

Dundee and Eastern Scottish Branch, Pharmaceutical Society, Queens hotel, at 7.30 p.m. Mr. R. McKay (an inspector for the Society) on "Recent Changes in Legislation."

Leicester and Leicestershire Branch, Pharmaceutical Society, Bell hotel, Leicester, at 7.30 p.m. Annual Dinner and Dance.

Liverpool Branch, Guild of Public Pharmacists, Walton hospital, Rice Lane, Liverpool, 9, at 6.30 p.m. Members' night.

Particle Size Analysis Group, Society for Analytical Chemistry, Chemical Society's rooms, Burlington House, Piccadilly, London, W.1, at 7 p.m. Mr. N. G. Stanley-Wood on "Estimation of the Surface Area of Fine Particles"; Mr. G. L. Fairs on "Size Analysis by Optical Microscopy" and Mr. M. J. Thornton on "Size Analysis with the Coulter Counter: Comparison with Sedimentation and Surface Area Measurements." (Inaugural meeting.)

Reigate and Redhill Pharmacists' Association, St. Mark's hall, Alma Road, Reigate, at 8 p.m. Mr. Shinner (East Surrey Water Co.) on "Water Supplies."

Royal Institute of Chemistry, Large lecture theatre, department of chemistry, St. Salvador's College, The University, St. Andrews, Fife, at 5.15 p.m. Dr. R. A. Jeffreys on "The Chemistry of Colour Photography."

Stirling and Central Scottish Branch, Pharmaceutical Society, Regal café, Stirling, at 7.45 p.m. Mr. K. A. Lees (Glaxo Laboratories, Ltd.) on "Griseofulvin."

Friday, February 18

Croydon Branch, Pharmaceutical Society, Greyhound hotel, Croydon, at 8 p.m. B.B.C. staff member from Television Centre on "Television Production."

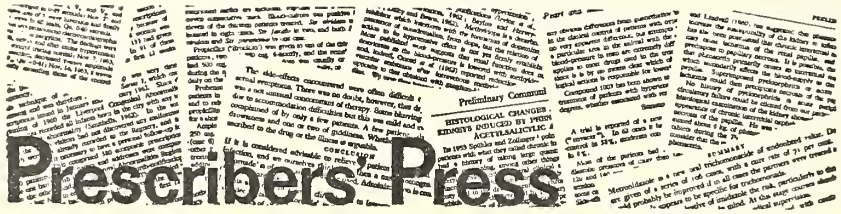
School of Pharmacy, University of Strathclyde, Glasgow, C.1, at 4 p.m. Professor Yves Cohen (faculty of pharmacy, University of Paris) on "Metabolism of Medicaments."

Wallasey Pharmacists' Association, Royal Ferry hotel, New Brighton, at 8 p.m. Dr. E. J. Shellard (reader in pharmacognosy, Chelsea College of Science and Technology) on "Pharmacy and Scenery in Poland" (illustrated).

Advance Information

Regional Conference of Pharmaceutical Society Branches (Yorkshire West Riding area), Bodington Hall, Leeds, 16. March 27. Speakers: Mr. W. K. Fitch (an assistant secretary of the Society) and Dr. D. C. Garratt (formerly chief analyst, Boots Pure Drug Co., Ltd.). Details from Mr. W. Howarth, 1 Wortley Road, Armley, Leeds, 12.

Scientific Apparatus and Materials Exhibition, Sheffield Industries Exhibition Centre, Carver Street, Sheffield, 1. April 20-23.



Prescribers' Press

What doctors are reading about developments in drugs and treatments

CURRENT practice in the use of oxygen in the home in Dundee has been studied and is reported by workers at Maryfield Hospital, Dundee. Most patients examined were seriously disabled by chronic respiratory disease and all were using Polymasks. Blood analyses showed that twelve of twenty-two patients suffered from hypercapnia (over-stimulation of the respiratory centre due to an excess of carbon dioxide in the blood), a condition in which there is a danger of severe respiratory acidosis if oxygen is given in high concentration. The dangers of using the Polymask (which delivers 2 or 4·1 litres a minute, resulting in an alveolar oxygen concentration of 45–60 per cent.) in such patients is described. The authors recommend that a patient with chronic hypercapnia should be provided with a mask that delivers not more than 30 per cent. oxygen, such as the Edinburgh disposable mask or the Ventimask. (*B.M.J.*, February 5, p. 331.)

THE successful use of intra-amniotic injections of 20-normal saline (18 per cent.) to induce labour or abortion is described by workers at Birmingham Maternity Hospital. Indications for such induction were therapeutic abortion, intrauterine death of fœtus, and gross fœtal abnormality. (*B.M.J.*, February 5, p. 327.)

THE effect of long-term administration of an oral contraceptive (Anovlar, containing ethinylœstradiol and norethisterone) on serum lipids and lipoproteins has been studied by workers in Sweden. After one year there was a significant rise in serum lipids, especially low density lipoproteins, which reached levels typical for post-menopausal women. The authors say the effect suggests either an androgen-like activity of norethisterone, or that prolonged medication leads to inhibition of normal ovarian incretion of œstrogens. (*Lancct*, February 5, p. 291.)

CONTEMPORARY THEMES

Subjects of contributions in current medical and technical periodicals.

ACETOHYDROXAMIC ACID. Inhibition by, of human mucosal and faecal urease-specific activity. *Lancet*, February 5, p. 296.

ALCOHOLISM: special techniques of therapy. *Discovery*, February, p. 44.

AN ORAL CONTRACEPTIVE. Serum lipids and lipoproteins during long-term administration of. *Lancet*, February 5, p. 291.

CHEMICAL TRANSFER OF LEARNING. *Discovery*, February, p. 11.

HOSPITAL PHARMACY ADMINISTRATION. The case method as a tool in teaching. *Amer. J. hosp. Pharm.*, December, 1965, p. 654.

NORMAL INSULIN RESPONSE TO GLUCOSE. *Lancet*, February 5, p. 280.

PESTICIDES. Human hazards from the use of. *Aust. J. Pharm.*, November, 1965, p. S110.

PHARMACEUTICAL ASPECTS OF SENSORY PERCEPTION (*presidential address*). *Aust. J. Pharm.*, November, 1965, p. S96.

SALT REJECTION by a porous glass. *Science*, January 14, p. 194.

SMELL. The mechanics of. *Discovery*, February, p. 29.

THE PROPHYLACTIC USE OF ANTACIDS in the prevention of the acid-pulmonary-aspiration syndrome (Mendelson's Syndrome). *Lancet*, February 5, p. 288.

URINARY EXCRETION OF SALT AND WATER. Mechanism by which drugs can increase the. *Aust. J., Pharm.*, November, 1965, p. S122.

ATROMID-S. Effect of, on fibrinolytic activity in patients with ischaemic heart disease and normal blood cholesterol levels. *Brit. med. J.*, February 5, p. 325.

INTRA-AMNIOTIC HYPERTONIC SALINE. Induction of labour by. *Brit. med. J.*, February 5, p. 327.

OXYGEN THERAPY in the home. *Brit. med. J.*, February 5, p. 331.

CYCLOPHOSPHAMIDE in the treatment of systemic lupus erythematosus. *Brit. med. J.*, February 5, p. 333.

APPLICATION OF STATISTICAL METHODOLOGY in quality control functions of the pharmaceutical industry. *J. pharm. Sciences*, January, p. 1.

DILUTE EMULSIONS. Stability and flocculation of oil droplets in. *J. pharm. Sciences*, January, p. 44.

EFFECT OF INERT TABLET INGREDIENTS on drug absorption 1. Effect of polyethylene glycol 4,000 on the intestinal absorption of four barbiturates. *J. pharm. Sciences*. January, p. 63.

DETERMINATION OF FREE SALICYLIC acid in aspirin and aspirin products. *J. pharm. Sciences*, January, p. 78.

CLOREXOLONE and some related phthalimides and 1-oxoisoindolines. The diuretic activity of. *J. Pharm. Pharmacol.*, February, p. 65.

GRANULAR MAGNESIA. The flow properties of. *J. Pharm. Pharmacol.*, February, p. 81.

AN ACCELERATED STORAGE TEST. A critical assessment of. *J. Pharm. Pharmacol.*, February, p. 101.

BENZOIC ACID AND CHLOROXYLENOL WITH CETOMACROGOL. The interaction of. *J. Pharm. Pharmacol.*, February, p. 115.

HUMAN GASTRIN: Isolation, structure and synthesis. *Nature*, February 5, p. 583.

METABOLISM OF DIMETHYL SULPHOXIDE to dimethyl sulphone in the rat and man. *Nature*. February 5, p. 619.

URINARY EXCRETION OF ACETYLSALICYLIC ACID in man. *Nature*, February 5, p. 620.

VIRUS PARTICLE SIZE and activity of antiviral agents. Possible correlation between. *Nature*, February 5, p. 619.

ANIMAL DISEASES COMMUNICABLE TO MAN. *Roy. Soc, Health J.*, January-February, p. 33.

VINBLASTINE SULPHATE *v.* CYCLOPHOSPHAMIDE in the therapy for lymphoma. *J. Amer. med. Ass.*, January 17, p. 173.

NEW COMPANIES

P.C.=Private Company. R.O.=Registered Office.

DON PERFUME MAKERS, LTD. (P.C.).—Capital £100. Directors: Jean A. Stephen, Heather Stephen and John B. Stephen. R.O.: 3 Parsonage Green, Wilmslow, Ches.

DRESDEN BEAUTY SALON, LTD. (P.C.).—Capital £100. Directors: Harold E. Stevens and Joan W. Stevens. R.O.: 13 North Street, Ashford, Kent.

COMMERCIAL TELEVISION

The information given in the table is of number of appearances and total screen time in seconds. Thus 7/105 means that the advertiser's announcement will, during the week covered, be screened seven times and for a total of 105 seconds.

Period February 20—26 PRODUCT	London	Midland	North	Scotland	Wales & West	South	North-east	Anglia	Ulster	Westward	Border	Grampian	Eireann	Channel Is.
Anadin	2/60	3/54	2/60	2/60	2/60	2/60	3/90	3/100	4/120	2/60	3/90	3/90	—	—
Askit powders	—	—	—	7/49	—	—	—	—	—	—	3/21	3/21	—	—
Aspro	5/73	5/73	5/73	5/73	5/73	5/73	5/73	5/73	5/73	5/73	5/73	5/73	—	—
Atrixo	3/45	3/45	—	—	3/45	3/45	—	3/45	—	—	—	—	—	—
Bisodol	—	2/14	—	—	—	—	—	—	—	—	—	—	—	—
Buttercup syrup	—	—	3/45	—	—	—	3/45	—	—	—	3/45	—	—	—
Contac 400	3/90	1/30	3/90	1/30	3/90	4/120	3/90	2/60	2/60	3/90	3/90	2/60	—	3/90
Disprin	2/45	4/75	2/45	2/30	2/45	4/75	1/15	2/45	3/60	3/60	4/75	3/60	—	2/45
Hill's sore throat lozenges	—	—	3/90	—	—	—	—	—	—	—	—	—	—	—
Imperial Leather	2/60	2/60	4/120	3/90	3/90	4/120	2/60	3/90	3/90	2/60	3/90	2/60	—	—
Meggezones	—	—	—	—	—	—	2/60	—	—	—	—	—	—	—
Moorland indigestion tablets	1/45	—	—	—	1/45	—	—	—	—	1/45	—	—	—	—
Nulon	2/60	1/30	1/30	—	—	1/30	—	—	—	—	1/30	1/30	—	1/30
Rinstead pastilles	2/30	2/30	1/15	1/15	2/30	1/15	3/45	2/30	2/30	2/30	1/15	1/15	—	—
Penetrol	1/7	1/7	1/7	—	1/7	—	—	1/15	—	—	—	—	—	—
Signal tooth-paste	2/60	2/60	4/120	1/30	4/120	2/60	2/60	4/120	1/30	1/30	1/30	1/30	—	5/150
SR tooth-paste	4/120	4/120	6/180	2/60	3/90	2/60	2/60	5/150	1/30	2/60	1/30	1/30	—	2/60
Steradent	—	2/60	1/30	2/60	1/30	2/60	1/30	3/90	—	4/120	2/60	1/30	—	2/60
Valderma balm	1/7	1/7	2/14	2/14	1/7	1/7	1/7	1/7	—	—	—	—	—	—
Woodward's gripe water	—	—	—	—	—	—	—	—	2/30	—	—	—	—	—

umulative price changes

AMENDING C&D QUARTERLY PRICE LIST FOR DECEMBER 1965

inute Magic (385 DG)				
		69 0	17 0	10 0
'clock (514 Gillette)				
blades		10		
(673 J of H)				
developer	20oz	26 0	—	3 3
	80oz	56 0	—	7 0
P. (104 BP)				
nfants powders		19 6	4 6	2 6
nda (385 DG)				
cream	A	58 0	14 6	8 6
netion (292 C) tablets				
ilene (898 Northern)				
cream	2oz	18 0	—	2 3
har (61 APC)†s4B				
HP gel				
0i.u./mil 5mils vial		18 0ea	—	—
0i.u./mil 2mils vial		12 8ea	—	—
0i.u./mil 5mils vial		29 6ea	—	—
eson (917 Organon)T5				
tablets 5mgm	100	12 0ea	—	18 0
	500	53 0ea	—	79 6
25mgm	100	48 0ea	—	72 0
	500	225 0ea	—	337 6
o-Ped (657 IL)†				
erglow (82 Balfour)				
air spray	60cc	18 8	4 5	2 9
refill	61cc	14 6	3 6	2 3
color (16 Agfa)				
ine film CK.17				
8mm standard	25ft	—	—	29 3
super	50ft	—	—	33 6
wick (23 Airwick)				
lpine mist		29 3	—	3 3
oral mist		29 3	—	3 3
y killer		29 3	—	3 3
noth proofer		29 3	—	3 3
pringtime mist		29 3	—	3 3
irwick mist		29 3	—	3 3
erosol mist		—	—	—
A vac (113 Bencard)				
esensitising vaccines				
	3×5mils	117 0ea	—	156 0
maintenance vial				
	10mils	75 0ea	—	100 0
A omet (837 MSD)				
blets 250mgm	30	15 2ea	—	22 9
	100	43 0ea	—	64 6
	500	210 0ea	—	315 0
A ance (852 Molyneux)				
vender 95cc	4752	13 6ea	3 3ea	23 6
190cc	4753	22 1ea	5 5ea	38 6
400cc	4754	31 6ea	7 8ea	55 0
omiser	4779	24 1ea	5 10ea	42 0
A ent (154 B)				
(distributors 501 Geigy)				
tablets 20mgm				
	1000	186 8ea	—	280 0
A nident (1178 Stafford)				
oothpaste	41gm	15 9	4 0	2 1
	75gm	22 9	5 8	3 0
ooth powder				
	42gm	12 0	3 0	1 9
	100gm	17 9	4 5	2 7
A rol (1492 Baum)				
ugarless fruit drops				
		30 0	4 6	3 9
A cardone (179 BDH)				
mpoules 2mils	6			
A nase (117 BPL)				
blets	48	30 0ea	7 6ea	52 6
A oloxin (179 BDH)†s7				
blets	250	104 0ea	—	156 0
A mia (175 BCP)				
A omia (1530 Fisons)				
A e Philippe (48 AP)				
and cream	5	13 4	3 4	1 11
crystal clear refill	14			
Softaire sachet	7			
A rews (976 PS&T)				
iver salt	10oz	38 8	9 6	5 0
A sed (208 BW)†				
blets 0·5mgm	100	26 0	—	3 3
	500	106 0	—	13 3
A n (50 APL)				
chilblain paint		12 0	3 0	1 9

	Antiphlogistine (369 DL)				
	poultice	5oz	23 2	6 0	3 4½
		10½oz	38 0	9 6	5 6½
		16oz	59 6	15 0	8 8
		dp 2lb	93 10	—	—
		dp 5lb	16 9ea	—	—
	Anzora (47 Anestan)				
	foam after shave		54 6	13 7½	7 9
	Apex (975 PDS)				
	bergamot conditioner				
		2⅜oz	41 0	10 3	5 11
	hair sheen	1oz	62 0	15 6	9 0
	Pre-Strate	2¾oz	62 0	15 6	9 0
	cream press	2oz	80 0	20 0	14 6
	conditioner "5"				
		2oz	80 0	20 0	14 6
	Apisate (1352 Wyeth)†s4B				
	tablets	10	34 6	—	3 10
		100	311 0	—	34 7
	Apple Blossom (596 HR)				
	soap complexion (3)				
		3333	—	—	8 6
	bath (3)	3336	—	—	14 6
	Aqua Mephyton (837 MSD)				
	ampoules 1mil	6	24 8ea	—	37 0
	0.5mil	25	58 0ea	—	87 0
	Aqua-Net (1524 Chembro)				
	sachet refill	50cc	10 4	2 7	1 6
	Aqua Pura (898 Northern)				
	tablets		32 0	—	4 0
	Arcancil (128 Biometica)				
	eyelash grower	777	43 10	10 9	6 6
	eye make-up remover				
		260	27 0	6 7	4 0
	mascara cake refill				
		335R	27 0	6 7	4 0
	Arcofac (61 APC)				
D		80oz			
D	Aronde (1446 ALL) existing entries				
I	**Aronde** (1446 ALL)				
	after shave lotion				
		48	27 3	6 7	3 11
	astringent lotion				
		35	27 3	6 7	3 11
	bath crystals	274	27 3	6 7	3 11
	beauty cream	26	31 0	7 6	4 6
	bubble bath	273	20 3	4 10	2 11
	children's	276	24 3	5 10	3 6
	cleansing milk	38	24 3	5 10	3 6
	deodorant roll-on				
		32	22 6	5 5	3 3
	spray	155	13 3	3 2	1 11
	aerosol	130	38 0	9 2	5 6
	eyebrow pencil	103	8 9	2 1	1 3
	eye liner	107	10 6	2 6	1 6
	eye make-up removing cream				
		27	17 3	4 2	2 6
	eye shadow	105	11 6	2 9	1 8
	French talc	30	24 3	5 10	3 6
	hand cream	31	20 6	4 11	2 11
	"Busy Miss"	33	12 0	2 11	1 9
	mascara block	104	13 3	3 2	1 11
	roll-on	106	19 0	4 7	2 9
	moisturising cream				
		28	31 0	7 6	4 6
	overnight cream	46	68 6	16 6	9 11
	shampoos				
	children's	275	24 3	5 10	3 6
	lacquer removing				
		41	27 3	6 7	3 11
	liquid egg & lemon, beer, medicated, lanolin, coconut oil				
			20 3	4 10	2 11
	egg & lemon, lanolin, giant				
			27 3	6 7	3 11
	cream egg & lemon, lanolin, beer				
			24 3	5 10	3 6
	for blondes	22	17 3	4 2	2 6
	shave foam aerosol				
		131	40 9	9 10	5 11
	Artane (746 Lederle)†s4B				
	tablets 2mgm	100	6 10ea	—	10 3
		1000	57 2ea	—	85 9
	5mgm	100	13 8ea	—	20 6
		1000	113 4ea	—	170 0
	Asmacort (1087 Roussel)†s1s4A				
	tablets	20	36 0	—	4 6
D		100			

	Atomist (495 Gardner)				
	perfume spray				
		FT/2	108 0	27 0	—
D	Atromid (649 ICI) capsules				
	Auraltone (1295 Wade)†				
D	2 dr. size				
D	Aurofac (340 C of GB) existing entry				
I	**Aurofac** (259 CM&R)T5VPO				
	food supplement (vet.)				
	2A	3lb	15 0ea	—	20 0
		10lb	42 9ea	—	57 0
		50lb	161 3ea	—	215 0
	D	10lb	61 6ea	—	82 0
		50lb	234 4½ea	—	312 6
	Avoleum (179 BDH)				
D	liquid	25mils			
	Bain d'Or (597 HCL)				
	bubbling bath oil pottery pack				
			175 4	42 9	25 0
D	Balenciaga (480 FP) existing entry				
I	**Balenciaga** (430 FP)				
	bath oil		23 6ea	5 7ea	43 6
	lipstick case		10 0ea	2 4ea	18 6
	refill		6 0ea	1 5ea	11 0
	talcum		10 0ea	2 4ea	18 6
	toilette fraiche				
		1¾oz	11 9ea	2 9ea	21 6
		4oz	21 0ea	5 0ea	38 6
		7¾oz	35 3ea	8 4ea	56 0
		15oz	49 0ea	11 8ea	90 6
		32oz	73 6ea	17 5ea	135 0
	atomiser		55 0ea	13 1ea	100 0
	refill		30 0ea	7 1ea	55 6
	for men				
	after shave	6½oz	15 0ea	3 7ea	27 6
	eau de Balenciaga				
		1¾oz	12 9ea	3 0ea	23 6
		4oz	23 0ea	5 5ea	41 6
		7¾oz	39 0ea	9 3ea	71 6
		15oz	58 0ea	13 9ea	107 6
		32oz	85 0ea	20 2ea	154 0
	atomiser		56 0ea	13 4ea	102 6
	refill		31 6ea	7 6ea	57 6
	Bambino (453 Fecher)				
	teething rings		3 6	—	5½
	Beecham's (104 BP)				
	pills		18 9	4 4	2 5
			38 11	9 0	5 0
		24	116 0	26 10	8
	Bell & Howell (1027 Rank)				
	cine cameras Super-8				
	Autoload 3		—	—	999 0
	4		—	—	1280 0
	Optronic Eye 3		—	—	1360 0
	4		—	—	1715 0
	case		—	—	99 6
	Benerva (1074 Roche)				
D	ampoules 25mgm/mil	3			
	Bernels (975 PDS)				
	hair cream	6oz	128 0	32 0	18 0
	Betnelan (518 Glaxo)T5				
	tablets 0·5mgm	30	6 10½ea	—	9 2
D	0·25mgm	500			
	Betnesol (518 Glaxo)				
D	lotion spray				
D	tablets 0·25mgm	500			
	Betnesol-N (518.Glaxo)				
D	lotion spray				
	Bio-Clear (596 HR)				
	treatment set	0870	—	—	21 0
	Biogastrone (117 BPL)				
	gel	5gm	10 0ea	—	15 0
	pellets	20	6 8ea	—	10 0
	Biotrase (769 LH)				
	cream	25gm	45 0	11 3	6 0
D		35gm			
	Birke by Dralle (529 Gorney)				
	shampoo	tube	40 0	10 0	5 10
I	**Bismutho** (68 AH)				
	compound	22oz	25 6ea	—	—
	Blue Box (810 Maw)				
			11 9ea	1 2ea	18 6
	Blue Mink (1188 Steiner)				
D	moisture milk				
D	toilet water				

the most versatile digitalis glycoside

LANOXIN brand DIGOXIN

TABLETS • SOLUTION • INJECTION • PÆDIATRIC ELIXIR

BURROUGHS WELLCOME & CO. (*The Wellcome Foundation Ltd.*) LONDON

	Body Mist (105 BTD)				
	spray,personal	24cc	27 4	6 10	3 8
	luxury	55cc	46 7	11 8	6 3
	Bonzine (333 Cupal)†				
	travel sickness tablets	20	24 6	—	2 9
	Brocillin (1393 BRL)				
D	capsules 125mgm	500			
D	250mgm	500			
D	tablets 125mgm	500			
D	Bronchilator (97 Bayer) existing sizes				
I	**Bronchilator** (97 Bayer)†s7				
	measured dose nebuliser	12·5mils	14 0ea	—	21 0
	refill		12 6ea	—	18 9
	Bronco (184 Bronco)				
	toilet packets interleaved		33 9 (3 doz)	—	1 3
	double		28 8 (1½ doz)	—	2 3
D	Brontan (107 BH&L)				
	Bronzine (852 Molyneux)				
	90cc	6992	8 11ea	2 2ea	15 6
	180cc	6993	14 4ea	3 6ea	25 0
	Broxil (1393 BRL)				
D	capsules 125mgm	500			
	Brylcreem (105 BTD)				
	gift dispenser		55 11	14 0	7 6
	refill	210cc	35 5	8 10½	4 9
	tube	84cc	18 7	4 8	2 6
	tub	75cc	16 2	4 0½	2 2
		150cc	24 2	6 0½	3 3
		340cc	46 7	11 8	6 3
	Butazolidin (501 Geigy)				
D	tablets 200mgm	20			
	Caapi (878 Napp)†				
	tablets	12	21 0	5 3	2 9
		200	20 0ea	5 0ea	31 8
	Calgon (26 A&W)				
	descaler sachet	4oz	22 6	—	2 6
	California (976 PS&T)				
	syrup of figs		18 10	4 8½	2 6
			37 7	9 4½	5 0
	Calpol (218 Calmic)				
	suspension	40oz	29 5ea	—	—
	Canon (1136 Silber)				
	projectors 318		—	—	1399 6
	518		—	—	1799 6
	Cinestar 5		—	—	1079 6
	Capture (Langeais(480 FP)				
	eau de toilette	2oz	15 0ea	3 7ea	27 6
		4oz	24 0ea	5 9ea	44 0
		8oz	40 0ea	9 6ea	75 0
	perfume	⅛oz	12 6ea	2 11ea	23 0
		¼oz	23 6ea	5 7ea	42 0
		½oz	41 0ea	9 9ea	77 6
		1oz	60 0ea	14 9ea	112 6
		2oz	95 0ea	22 7ea	175 0
	atomiser		33 6ea	8 0ea	63 0
	refill		23 6ea	5 7ea	42 0
D	Carbon tetrachloride (649 ICI) capsules 1·0mil				
	Carmil (657 IL)†				
	diarrhoea mixture	3oz	33 8	8 5	4 11
D	Carovit (292 C) tablets				
	Cartwright (234 Cartwright)				
	Scotch ginger co.	3oz	11 6	1 9	1 9
	Casaque (Jean d'Albret (1145 Sirex)				
	eau de cologne spray		—	—	46 0
	Cassells (Dr.) (104 BP)				
	tablets		46 6	—	5 0
	Cellogen (385 DG)				
	cream	A	117 0	29 0	17 0
		B	16 4ea	4 1ea	28 6
	hand cream	A	66 0	17 0	9 6
		B	110 0	28 0	16 0
	Certor (786 MacDonald)				
	bandage w.o.w.	2in × 4yd	5 1	—	7½
		2½in × 4yd	6 1	—	9
		3in × 4yd	7 1	—	10
		4in × 6yd	13 0	—	1 6½
		6in × 6yd	18 9	—	2 3
	cotton wool absorbent	½oz	5 8	—	8
		1oz	7 7	—	11
		2oz	12 5	—	1 6
		4oz	21 7	—	2 7
		8oz	38 6	—	4 7
		16oz	71 3	—	8 6
	hospital quality	1oz	6 5	—	9½
		2oz	10 0	—	1 2
		4oz	16 11	—	2 0
		8oz	29 0	—	3 6
		16oz	52 3	—	6 3
	gauze plain	½yd	5 9	—	8½
		1yd	10 1	—	1 2½
		3yd	22 10	—	2 8½
		6yd	42 0	—	5 0
		12yd	81 11	—	9 9
	lint plain	½oz	7 3	—	10½
		1oz	10 10	—	1 4
		2oz	18 9	—	2 3
		4oz	34 6	—	4 1
		8oz	64 0	—	7 8
		16oz	122 6	—	14 9

I	**Cerumol** (718 LAB)†				
	Charm (1327 WSL)				
	hairpins Polypak		41 0 (1 gross)	10 3 (1 gross)	6
I	**Chiefs** (702 KC)				
	handkerchiefs 3-ply		47 5 (1 gross)	—	6
	Chymacort (61 APC)TS				
	ointment	14.2gm	11 6ea	—	16 9
	Chymar-Zon (61 APC)				
I	1 × 6 vials		36 0ea	—	54 0
I	**Cicatrin** (218 Calmic) TS				
	cream	5gm	36 0	9 0	5 3
		15gm	72 0	18 0	10 6
		100gm	27 6ea	6 10½ea	48 1½
	powder	5gm	36 0	9 0	5 3
		15gm	72 0	18 0	10 6
		50gm	15 0ea	3 9ea	26 3
I	**Cinecol** (673 J of H)				
	film cement	25cc	24 0	—	3 0
		100cc	48 0	—	6 0
		500cc	11 8ea	—	17 6
		2¼litre	38 0ea	—	57 0
D	**Cleer** (1262 UL)				
I	**Cleer** (1552 UL)				
	Co-Hydeltra (837 MSD) TS				
	tablets 5mgm	100	20 8ea	—	—
	Colic-Radiol (1023 Radiol)				
	for horses	10oz	63 0	15 9	8 6
D	**Collobell** (107 BH&L)				
	Colomycin (972 Pharmax)TS				
	tablets 1,500,000 units	8	39 4ea	—	52 5
		50	239 0ea	—	318 8
D	**Color & Style** (597 HCL)				
	Compactoid (339 CG)				
	first aid outfit				
I	motorists	A45	68 0	—	7 6
I	tropical	A99	69 8ea	—	93 0
	Compound 'W' (655 ICC)				
	wart remover		18 11	4 9	2 6
	Condy's (1457 PP Ltd.)				
D	fluid	8oz			
	Conovid-E (1121 Searle)				
D	bottle 100 & 250				
	Con-Sol (673 J of H)				
	developer	2¼litre	132 0	—	16 6
		1 gall	20 8ea	—	31 0
		5 gall	93 4ea	—	140 0
I	**Contac 400** (835 M&J)†				
	Cool Charm (105 BTD)				
	deodorant roll-on	22cc	29 2	7 3½	3 11
D	**Coopaphene** (295 CM&R) existing entry				
I	**Coopaphene** (295 CM&R)				
	liquid drench	1qt	20 7½ea	—	27 6
		1gall	75 0ea	—	100 0
	Coopers (295 CM&R)				
	aerosol flykiller				
	regular		35 3	—	3 11
	super		38 3	—	4 3
	Coprosol (397 Dunster)				
	drops	25mils			
	Corega (1178 Stafford)				
	denture powder	49gm	28 0	—	3 6
		100gm	46 0	—	5 9
	Cornet (1017 Pullin)				
	flashgun 100		—	—	315 0
	220		—	—	630 0
	Corsica (960 ADP)				
	cleansing milk		—	—	14 6
	creme ajjacio	small	—	—	25 3
		large	—	—	34 0
	creme calvi	small	—	—	28 0
		large	—	—	37 3
	tonic		—	—	10 6
	Cortifoam (969 Pfizer)TS				
	aerosol	15gm	7 0ea	—	10 6
		50gm	19 0ea	—	28 6
	Cortisone (1263 Upjohn)TS				
	tablets 25mgm	20	11 9ea	—	—
		40	23 6ea	—	—
D	suspension 10mils				
	Co-tabs (292 C)				
	Q.11 quinidin. 125mgm	100	274 0	—	—
		250	55 9ea	—	—
	Q.12 200mgm	100	430 0	—	—
		250	88 3ea	—	—
	Q.13 300mgm	100	640 0	—	—
		250	132 0ea	—	—
	Coty (301 Coty)				
	Blush Accent cream	680	72 9	18 2	10 6
	powder	675	168 6	42 1½	24 6
	refill	676	65 6	16 4½	9 6
	twinset	2094	103 3	25 10	15 0
	Veil Naturelle cream foundation	685	86 0	21 0	12 6
	finishing powder	690	103 3	25 10	15 0
	Crampex (657 IL)				
	tablets	8	20 6	5 2	3 0
D		24	—	—	—
	Creme Puff (813 MF)				
	refill		32 8	7 9	4 9
	Cremomycin (837 MSD) †S4B				
	suspension	8oz	23 6ea	—	35 3

	Creo (234 Cartwright)†				
	bronchialsyrup	4oz	16 6	4 1½	
		8oz	23 6	5 10½	
	Crest Naturac (1203 Surex)				
	protectives, lubricated teat		72 0 (1 gross)	—	
	Crystapen V (518 Glaxo)TS				
	tablets 125mgm	500	102 6ea	—	15
	Cuckoo (453 Fecher)				
	babies ear cap		56 0	5 7	
	menthol snuff		8 0	2 0	
	Curacho (336 Curacho)				
	embrocation	3oz	20 0	5 0	
		6oz	32 9	8 3	
	(vet.)	3oz	18 0	4 6	
	massage cream	6oz	27 0	6 9	
		2oz	20 0	5 0	
	medicated bath salts	12oz	20 0	5 0	
	dog shampoo	3oz	24 0	—	
		80oz	14 0ea	—	1
I	**Curequick** (853 Modkem)				
	vapour rub	1oz	16 6	4 1	
	Cussons (338 Cussons)				
	Imperial Leather shampoo		19 0	4 9	
	Cutex (256 CPL)				
	cuticle remover		20 2	5 2	
	cream		20 2	5 2	
	emery boards		14 0	3 6	
	nail flex	14gm	20 0	5 2	
	Cycloserine (1303 Wander)TS				
	tablets 250mgm	100	128 4ea	—	
		500	633 4ea	—	
	Cytacon (518 Glaxo)				
	tablets 50mcgm	25	36 0	—	
	Cytamen (518 Glaxo)				
	ampoules 1mil, 250mcgm	6	33 0	—	
	Dalay (657 IL)†				
D	Dalay (657 IL) tablets				
D	Damaskin (261 Christy) and (284 Colloidal)				
I	**Damaskin** (657 IL)				
	Dandricide (113 S&B)		41 8	10 5	
	Davenol (1352 Wyeth)†s7				
	linctus	4oz	41 9	—	
		40oz	30 0ea	—	4
D	Daxaids (1262 UL)				
I	**Daxaids** (1552 UL)				
D	Decicain (97 Bayer) ointment				
	Delph (496 Garsalle)				
	cleansing milk	4oz	65 0	16 3	
D	Delsey (702 KC) existing entry				
I	**Delsey** (702 KC)				
	facial tissues	150	16 10	—	
	toilet tissue roll		11 5	—	
	twin roll		21 4	—	
	flat pack single		7 11	—	
	treble		21 4	—	
	Delta-Cortef (1263 Upjohn)TS				
	tablets 5mgm	100	15 0ea	—	
		500	67 6ea	—	
	Delta-Genacort (1530 Fisons)TS				
	tablets 1mgm	100	54 0	—	
		500	18 9ea	—	2
	5mgm	20	60 0	—	1
		100	15 0ea	—	2
		500	67 6ea	—	10
	Democene (393 DPL)				
	solution	28mils	96 0	24 0	14
	Denogel (956 Peptinol)				
I	(distributors 1545 Vestric)				
	De-Nol (956 Peptinol)				
	(distributors 1545 Vestric)				
	bottle		54 0	13 6	90
D	treatment				
	Dentosine (339 CG)	4oz	27 6	6 11	3
	Dentu-Creme (1179 Stafford)				
	large		20 7	5 1½	3
	Depot-Glumorin (452 FBA)				
D	ampoules 40 bu	25			
	Depot-Procafin (452 FBA)				
D	ampoules 5mils	5			
	Desert Flower (1131 Shulton)				
	deodorant roll on	1790	45 3	11 0	6
	spray	1838	45 3	11 0	6
	dusting powder	1730	72 0	17 7	10
	hand cream	1810	50 3	12 3	7
	hand and body lotion	1709	48 6	11 10	7
	plastic bottle	1814	58 9	14 4	8
	dispenser	1706	107 6	26 2	16
	perfume	1746	72 3	17 7	10
	presentation	1745	72 3	17 7	10
	spray Cologne	1739	114 3	27 10	17
	talcum powder	1923	40 0	9 9	6
	toilet water	1735	80 9	19 8	12
	De Witt's (372 De Witt)				
	antacid tablets	small	13 0	3 2	1
		large	27 9	6 9	3
	"De Witt's pills"		19 9	4 10	2
			39 0	9 6	5
			62 0	15 1	8

	ealing powder		17	6	4	4	2	6
	idney & bladder pills							
			19	9	4	10	2	8
			39	0	9	6	5	3
			62	0	15	1	8	3
	heumatic rub		18	9	4	7	2	9
	ntacid wafers							
	18 (394 DF)†s1							
	mpoules 5mgm/mil							
		6	60	0	—		7	
		100	51	8ea	—		77	6
	dreson (917 Organon)†T5							
	tablets 1mgm	100	54	0	—		6	9
		500	18	9ea	—		28	1½
	5mgm	100	15	0ea	—		22	6
		500	67	6ea	—		101	3
	dreson-F (917 Organon)†T5							
	tablets 1mgm	100	54	0	—		6	9
		500	18	9ea	—		28	1½
	5mgm	100	15	0ea	—		22	6
		500	67	6ea	—		101	3
	tox (818 M&B)							
	eed killer	8oz	34	0	—		4	3
		20oz	78	0	—		9	9
	7oz & 12oz							
	oestrol (179 BDH)							
	tablet ·3mgm	1000						
	drostreptomycin sulphate (378 Dista) 1gm & 5gm							
	syn (179 BDH)†s4B							
	rup	115mils	60	0	—		7	6
		1 litre	39	6ea	—		59	3
	ablets	25	62	6	—		7	10
		250	42	2ea	—		63	3
	on (1262 UL)							
	ron (1552 UL)							
	inex (721 LC)							
	intment		34	4	8	7	4	6
	uppositories		38	2	9	6½	5	0
	ol (376 Dimol) existing entry							
	ol (376 Dimol)							
	(distributors 49 AF)							
	ablets B	48	29	6	7	4½	4	2
	A or B	100	44	6	11	1½	6	2
	yrup	16oz	90	0	22	6	12	6
D	**otapp** (1071 Robins)							
	ixir	16oz	18	10ea	4	9ea	33	0
	blets L.A.	100	33	5ea	8	4ea	—	
		500	160	0ea	40	0ea	—	
	y (810 Maw)							
	eeder glass							
		360.00	16	6	—		2	1
	olythene	360.01	20	6	—		2	7
D	**eford's** (104 BP)							
	agnesia		25	3	5	10	3	3
D	**alm** (104 BP)†							
	ottle		42	10	10	8½	5	6
D	**loquin** (1121 Searle)							
	blets	500						
D	**acide** (837 MSD)‡							
	eep dip	½gall	67	6ea	—		90	0
D	**ma** (378 Dista)†s4B							
	blets 25mgm	100	17	8ea	—		26	6
		500	80	8ea	—		121	0
	50mgm	25	9	0ea	—		13	6
		100	32	0ea	—		48	0
		500	139	6ea	—		209	3
D	**mide** (179 BDH)							
	blets	500						
D	**in** (1037 Reckitt)							
	lets	dp500	12	3ea	—		17	2
D	**thy Gray** (385 DG)							
	acing cream		69	0	17	0	10	0
	ansing cream liquefying							
			63	0	16	0	9	3
			103	0	26	0	15	0
			154	0	38	0	22	6
	eansing grains		51	0	13	0	7	6
	earing cream		59	0	15	0	8	6
	eam rouge		55	0	14	0	8	0
	y skin cleanser		63	0	16	0	9	3
			103	0	26	0	15	0
			154	0	38	0	22	6
	tra rich night cream							
			66	0	16	0	9	6
			110	0	28	0	16	0
			168	0	42	0	24	6
	e beauty cream		55	0	14	0	8	0
	ebrow pencil		23	0	6	0	3	3
	e shadow cream		58	0	15	0	8	6
	ticks		61	0	15	0	9	0
	e lining pencil propelling							
			76	0	19	0	11	0
	efill		26	0	7	0	3	9
	iner liquid		65	0	16	0	9	6
	nd cream	tube	45	0	11	0	6	6
		jar	54	0	14	0	8	0
			85	0	23	0	12	6
			151	0	38	0	22	0
	edicated							
	eal-and-conceal stick							
			48	0	12	0	7	0
	elveteen		55	0	14	0	8	0
	ange flower skin lotion							
			65	0	16	0	9	6
			127	0	32	0	18	6
	otective lotion		61	0	15	0	9	0
	ick cleanser		62	0	16	0	9	0
	ll-on deodorant		51	0	12	0	7	6
	lon cold cream		63	0	16	0	9	3
			103	0	26	0	15	0
			154	0	38	0	22	6

	sensitive skin cream		66	0	17	0	9	6
			110	0	28	0	16	0
			168	0	42	0	24	6
	special dry skin mixture							
			69	0	17	0	10	0
			127	0	32	0	18	6
			217	0	54	0	32	0
	stay-matt		61	0	15	0	9	0
	texture lotion		65	0	16	0	9	6
			127	0	32	0	18	6
D	Colour Drama							
	Drapolene (218 Calmic)							
		55gm	31	3	—		3	11
		1lb	12	0ea	—		—	
	Drenalgin (770 LP)†							
	Drexamin (853 Modkem)†							
	cream	1oz	20	0	—		—	
		2oz	33	0	—		—	
		4oz	58	0	—		—	
		1lb	132	0	—		—	
	Drinkometer (697 KJ)							
	breath analyser		23	9	—		3	6
	Droxalin (976 PS&T)							
	tablets	30	26	0	—		3	0
I	**Dr. Sawyers** (853 Modkem)							
	pile ointment		20	0	4	11	—	
D	Dubarry (721 LC)							
I	**Dubarry** (721 LC)							
	creme shalimar		16	1	4	0	2	4
	Dulsils (147 Boots)†							
	Duracillin A. S. (413 Lilly)T5							
	ampoules	10mils	2	8ea	—		4	0
	Ecusson (Jean d'Albret (1145 Sirex)							
	eau de cologne spray		—		—		44	0
	Edecrin (837 MSD)							
	tablets	100	65	0ea	—		97	6
		500	315	0ea	—		472	6
	Efcortelan (518 Glaxo)							
D	intra-articular injection vial							
D	ointment 2½% 50gm							
	Elastoplast (1155 S&N)							
	first aid dressings							
		4120	13	1	—		1	6
		4121	21	7	—		2	6
		4122	34	6	—		4	0
	invisible	8121	21	7	—		2	6
	ventilated/washable							
		9120	13	1	—		1	6
		9121	21	7	—		2	6
		9122	34	6	—		4	0
	waterproof	7120	13	1	—		1	6
		7121	21	7	—		2	6
		7122	34	6	—		4	0
D	4106, 4111, 9106, 9111, 7106, 7111							
	Elation (385 DG)							
	bath essence	intro	40	0	10	0	5	9
		1oz	63	0	16	0	9	3
		2oz	100	0	25	0	14	6
	dusting powder							
		plastic	59	0	15	0	8	6
		drum	96	0	24	0	14	0
	film make-up		61	0	15	0	9	0
	perfume spray mist		130	0	32	6	19	0
	puffer spray		86	0	21	6	12	6
	skin perfume	intro	40	0	10	0	5	9
		1oz	63	0	16	0	9	3
		2oz	100	0	25	0	14	6
		4oz	151	0	38	0	22	0
	Ellimans (414 Ellimans)							
	(distributors 621 Horlicks)							
	penetrant rub	4oz	30	0	7	4	4	0
I	**Emprazil** (208 BW)†s7							
	Endocil (917 Organon)							
	treatment cream							
		45gm	65	0	16	6	9	6
	Eno's Fruit Salt (104 BP)							
			13	11	3	2½	1	9
			29	3	6	9	3	8
			49	10	11	6	6	3
	Entair-A (179 BDH)†							
I	capsules	250	90	0ea	22	6ea	—	
	Enthousiasme (653 I&R)							
	Nos. 1 and 2							
	eau de Cologne	2oz	—		—		31	6
		4oz	—		—		53	6
		8oz	—		—		78	6
	perfume	⅛oz	—		—		39	6
		¼oz	—		—		67	6
		½oz	—		—		87	6
		1oz	—		—		122	6
		2oz	—		—		189	6
I	**Ephazone** (47 Anestan)†							
	Ephynal (1074 Roche)							
D	tablets 3mgm	1000						
	Equatrate (1352 Wyeth)†s4B							
	tablets	50	77	0	—		8	7
		250	340	0	—		37	10
	Ergoapiol (261 Christy)†s1							
			102	10	25	9	15	0
	Esidrex (262 CIBA)†s4B							
	tablets 25mgm	25	76	0	—		9	6
		100	23	6ea	—		35	3
		500	115	8ea	—		173	6
	50mgm	25	11	8ea	—		17	6
		100	43	4ea	—		65	0
		500	209	6ea	—		314	3
	Esidrex K (262 CIBA)†s4B							
	tablets	25	44	0	—		5	6
		100	13	6ea	—		20	3
		500	65	10ea	—		98	9
	Esoderm (1007 PL)							

	shampoo	20gm	16	0	4	0	2	4
		300gm	96	0	24	0	14	0
	Estee Lauder (425 ELC)							
	eye shadow glow		—		—		41	9
	glow-in-the-round		—		—		35	3
	jewelled mouche		—		—		41	9
	scented coif powder		—		—		41	9
	E.S.T.P. (1457 PP Ltd.)							
D	powder							
	Eumig (673 J of H)							
	cameras							
	C16R		—		—		3557	3
	Viennette super 8		—		—		1395	0
	projectors							
	Mark M	f1.3/15-25mm	—		—		995	0
		f1.3/13-25mm	—		—		1170	0
	super 8		—		—		1195	0
	P8 automatic novo		—		—		855	0
	P8 zoom		—		—		730	0
	case		—		—		82	6
D	Eurax (501 Geigy) existing entry							
I	**Eurax** (501 Geigy)							
	lotion	60mils	36	0	—		4	6
		120mils	63	0	—		7	10½
		500mils	18	0ea	—		27	0
	ointment	30gm	27	0	—		3	4½
		120gm	66	0	—		8	3
	hydrocortisone cream TS							
			76	0	—		9	6
	Euvitol (34 A&H)†s4B							
	elixir	4oz	51	0	12	9	7	5½
		2 litres	52	0ea	13	0ea	91	0
	tablets	20	52	0	13	0	7	7
		250	37	8ea	9	5ea	65	11
	Evan Williams (437 EW)							
I	Tunisian henna		54	6	13	7	7	11
	Evidorm (97 Bayer)							
D	tablets	250						
I	**Expiral** (2 Abbott)†s1s4A							
	(vet)	100mils	9	3ea	—		13	10
	Eyemakers a la Carte (1052 Revlon)							
I	eye shadow brush on							
		0839	117	6	29	4½	17	6
	Famel (690 Keldon)†							
	syrup children's							
		6oz	39	0	—		4	6
	Familia (304 Costa)							
	baby food	7oz	33	0	—		3	6
	Fefol (1153 SKF)							
	Spansule capsules	30	76	0	—		9	6
		250	45	8ea	—		68	6
I	**Fellows** (451 F&J) syrup †							
	Fenostil (1493 Zyma)†s7							
	retard tablets	20	5	0ea	—		7	6
		100	21	10ea	—		32	9
	syrup	100mils	4	0ea	—		6	0
	Ferraniacolor (1500 MM&M)							
	cine film pre-striped							
	8mm reversal 50ft		—		—		33	6
	Ferromyn (218 Calmic)							
	"B" elixir	80oz	60	6ea	—		—	
D	Ferronicum (1098 Sandoz)							
	Ferro-Redoxon (1074 Roche)							
D	granules	2500						
	Ferrotone (1367 R&B)							
		small	24	0	—		3	0
D	Ferrovet (324 Crookes)							
	Fete (852 Molyneux)							
	eau de toilette							
	25cc	2560	12	1ea	2	11ea	21	0
	56cc	2561	19	9ea	4	10ea	34	6
	95cc	2562	28	5ea	6	11ea	49	6
	210cc	2563	43	4ea	10	7ea	75	6
	420cc	2564	83	5ea	20	4ea	145	6
	atomiser	2578	33	0ea	8	1ea	57	6
	parfum	1532	24	10ea	6	1ea	43	6
		1533	34	1ea	8	4ea	59	6
		1534	50	1ea	12	2ea	87	6
	20cc	1535	73	1ea	17	10ea	127	6
	40cc	1536	119	0ea	29	0ea	207	6
	60cc	1537	223	8ea	54	6ea	390	0
	atomiser	1657	46	9ea	11	5ea	81	6
	refill	1573	25	6ea	6	3ea	44	6
	Fiesta (981 Picot)							
	perfume miniature		44	6	11	1½	6	6
		¼oz	130	6	32	7½	19	0
		½oz	20	10ea	5	2½ea	36	6
		1oz	38	7ea	9	8ea	67	6
		2oz	66	0ea	16	6ea	115	6
	First Aid Cases (1155 S&N)							
		8150	—		—		9	0
		8042	—		—		11	9
		8125	—		—		16	2
		8155	—		—		18	4
	agricultural	B.1	—		—		13	5
		B.2	—		—		21	1
	factory	F.1	—		—		32	3
		F.2	—		—		76	0
		F.3	—		—		122	0
	food hygiene							
		8125A	—		—		16	2
	motorists holdall							
		8025	—		—		23	7
	public vehicles							
		8207	—		—		62	5
	Fisherman's Friend (771 LCPL)							
	family linctus		19	0	4	9	2	9
	throat and chest lozenges							
			9	0	2	3	1	3
	Flawless (256 CPL)							
	medicated soap							
		2¾oz	11	4	2	10	1	5

D	Fleeting Moment (Balenciaga(480 FP)				
I	**Fleeting Moment** (Balenciaga(480 FP)				
	eau de toilette	1¾oz	15 0ea	3 7ea	27 6
		4oz	24 0ea	5 9ea	44 0
		7¾oz	40 0ea	9 6ea	75 0
		15oz	59 0ea	14 0ea	108 6
		32oz	86 0ea	20 5ea	159 6
	atomiser		57 6ea	13 8ea	105 0
	refill		32 6ea	7 8ea	58 6
	perfume	⅛oz	12 9ea	3 0ea	23 6
		⅙oz	16 3ea	3 10ea	30 0
		¼oz	24 6ea	5 10ea	45 0
		½oz	41 0ea	9 9ea	75 6
		1oz	67 3ea	16 0ea	126 0
		2oz	99 6ea	23 7ea	186 0
		4oz	159 6ea	37 10ea	294 0
	atomiser		34 0ea	8 1ea	63 0
	refill		23 6ea	5 7ea	43 6
	Flit (427 Esso) (distributors 1006 PI)				
		16oz	33 10	—	4 0
		32oz	54 0	—	6 6
		160oz	182 0	—	21 6
	aerosols				
	fly killer popular		31 6	—	3 6
	household		35 2	—	3 11
	moth proofer				
	popular		35 2	—	3 11
	woodworm killer		44 3	—	4 11
	livestock spray	160oz	159 0	—	19 0
		5gal	62 6ea	—	88 6
	sprayer continuous action		41 0	—	5 0
	large		57 6	—	6 6
	powder plastic squeeze pack		15 3	—	1 9
	aerosol ant killer				
	popular		35 2	—	3 11
	large		60 9	—	6 9
	Floraquin (1121 Searle)				
D	tablets	400			
	Folvite (746 Lederle)				
	solution 15mgm/mil	10mils	3 4ea	—	5 0
	Form Cut (1156 FS)				
	adhesive fingertip bandage		24 0	—	3 0
	Formoped (969 Pfizer)				
	foot rot aerosol (vet.)		—	—	15 0
	Formula 21 (104 BP)				
		7-day	83 8	—	9 0
		21-day	209 3	—	22 6
	Fresh Start (256 CPL)				
	cleansing gel	2oz	31 2	7 10	4 6
	Fynnon (104 BP)				
	salts		27 3	6 3½	3 6
	Ganda (898 Northern)				
	camphorated goose grease		18 0	4 6	2 6
			30 0	7 6	4 0
			50 0	12 6	7 0
	Gastrinol (956 Peptinol)† (distributors 1545 Vestric)		11 3	2 10	17 6
	Gaylord Hauser (234 Cartwright)				
	brewer's yeast powder	16oz	61 1	—	7 6
	capsules				
	vitamin A & D	50	36 0	—	4 6
	vitamin E	50	58 0	—	7 3
	wheatgerm oil	50	58 0	—	7 3
	dried skim milk powder	16oz	46 4	—	5 5
	extra potency yeast tablets	100	35 2	—	4 3
		250	73 5	—	8 9
	molasses	16oz	24 0	—	3 0
		32oz	44 0	—	5 6
	tablets				
	vitamin B comp	50	32 0	—	4 0
	vitamin C	50	42 0	—	5 3
	calcium with vitamin D	50	26 0	—	3 3
	Vegisalt	12oz	20 0	—	2 6
	vitamins	56	72 0	—	9 0
	wheat germ	12oz	43 5	—	5 4
	Gem (365 Demuth) (distributors 1054 R&A)				
	dry shampoo aerosol		47 5	11 10	6 11
	Gerber (200 B&P)				
	baby cereals	8oz	16 2	—	1 8
	junior foods				
	lamb dinner, beef dinner, veal dinner	4¼oz	11 5	—	1 2
	strained foods				
	lamb dinner, beef dinner, veal dinner	4¼oz	11 5	—	1 2
	Germolene (104 BP)				
		tin	19 6	4 10½	2 6
	Germoloids (104 BP)				
			31 1	7 2	4 0
			58 5	13 6	7 6
	Gillette (514 Gillette)				
I	razor adjustable Mk. II		87 10	21 4½	12 6
	Slim Twist		45 8	11 1½	6 6
	shaving cream		21 3	5 1	2 11
	shaving brush standard		50 11	12 5	7 3
	large		69 8	16 11½	9 11
	ex. large		86 1	20 11½	12 3
	badger/bristle		139 10	34 1	19 11
D	blade blue dispenser (10)		—	—	—
D	razor Silver Streak		—	—	—
D	shaving cream large		—	—	—
D	Givenchy (480 FP) existing entry				
I	**Givenchy** (480 FP)				
	lipstick refill		6 0ea	1 5ea	11 0
	for men				
	after shave	4oz	11 9ea	2 9ea	21 0
		8oz	20 6ea	4 10ea	37 6
	eau de toilette	2oz	14 6ea	3 5ea	26 0
		4oz	23 6ea	5 7ea	43 6
		8oz	42 0ea	10 0ea	78 0
		16oz	60 0ea	14 3ea	112 6
	atomiser		56 0ea	13 4ea	102 6
	refill		31 6ea	7 6ea	57 6
	Glo-Ahead (1188 Steiner)				
	hair colouriser extra		37 6	9 4	5 6
	Gluco (1335 Wigglesworth)				
	barley sugars	4oz	9 0	1 4	1 3
	cherry cobs	4oz	9 0	1 4	1 3
	fruit flavours	4oz	9 0	1 4	1 3
	mints	4oz	9 0	1 4	1 3
	treacle butters	4oz	9 0	1 4	1 3
	Glumorin (452 FBA)				
D	dry substance 10 bu	5			
D	tablets 30bu	20			
	Gordon Moore (528 GM)				
	cosmetic toothpaste		16 3	4 1	2 2
			24 7	6 2	3 3
	Goya (532 Goya)				
	bath blossoms	28	27 6	6 8½	4 0
	bath salts	25	44 8	10 10¾	6 6
	CedarWood				
	after-shave lotion	127	41 3	10 0¾	6 0
	hair groom		58 5	14 3	8 6
	pre-electric shave	132	41 3	10 0¾	6 0
	talcum powder	129	32 8	7 11½	4 9
	creme perfume flowette		55 0	13 4	8 0
	Entice				
	cologne	1oz	41 3	10 0¾	6 0
	gift size	40	58 5	14 2¾	8 6
	stick		37 9	9 2½	5 6
	Frenzy				
	cologne	1oz	48 2	11 9	7 0
	gift size	39	65 4	15 11	9 6
	stick		37 9	9 2½	5 6
	hand lotion	75	27 6	6 8½	4 0
	Love Affair, Gardenia, Black Rose, No. 5				
	cologne	1oz	41 3	10 0¾	6 0
	gift size	41	58 5	14 2¾	8 6
	stick	45	37 9	9 2½	5 6
	talcum powder	20	32 8	7 11½	4 9
	Granose (535 Granose)				
	peanut butter	6oz	15 2	—	1 7
		12oz	27 2	—	2 10
	peanut crumble	6oz	15 2	—	1 7
		12oz	27 2	—	2 10
	Green Velvet (596 HR)				
	soap complexion (3)	5333	—	—	8 6
	bath (3)	5336	—	—	14 6
	Guerlain (548 Guerlain)				
	beaute d'un soir		—	—	42 0
	Haemostatic Erce (292 C)				
	ampoules 10mils	6	120 0	—	15 0
	Hahn (234 Cartwright)				
	hair tonic		41 6	10 4½	5 9
			62 6	15 7½	8 9
	Halex (560 Halex)				
	hairbrushes gents				
	military	D110	35 6	8 10	5 0
	Olympic	D448	77 6	19 4	11 0
	3-piece set	D453	41 3	10 4	5 11
	5-piece set	D455	62 6	15 8	9 0
	hairbrushes ladies				
	Radial brush/comb	D314	35 6	8 10	5 0
	Carefree	D366	41 3	10 4	5 11
	Radial	D376	41 3	10 4	5 11
	hairbrushes children's				
	Noddy	DF180	37 9	9 5	5 6
	Sooty	DF181	37 9	9 5	5 6
	ladies brush sets				
	Harmony 3-piece	E658	145 0	36 3	21 0
	Princess 3-piece	E659	158 9	39 8	22 6
	coffret Caprice	E637	77 6	19 4	11 0
	nail brushes				
	king size	D516	28 0	7 0	4 0
	non-slip	D520	13 3	3 4	1 11
	coloured filaments	D528	21 0	5 3	3 0
	toothbrush Lectro-dent	K110	45 0ea	9 7ea	69 6
	toothbrushes nylon				
	short head	A262	13 4	—	1 8
	denture	A400	28 0	—	3 6
D	combs nylon	CC485 & C405			
D	ladies brush sets	E634, E644, E661, E665, E694, E679			
D	toothbrush Tufty	A194			
D	timer set	A996			
D	short head	A210 & A260			
	Haliverol (938 PD)				
D	capsules	25			
	Harriet Hubbard Ayer (852 Molyneux)				
	astringent lotion	401	—	—	16
	Ayeristocrat				
	body lotion	514	—	—	21
	bubble bath	523	—	—	27
	parfum de toilette	512	—	—	33
	soap	519	—	—	7
	talc	515	—	—	11
	Ayerol	1163	—	—	13
	base de poudre jaspée	126	—	—	27
	brush and soap kit	883	—	—	24
	bubble bath	491	—	—	12
		492	—	—	24
	cleanse Ayer	456	—	—	12
		457	—	—	18
		458	—	—	35
	cleansing cream	100	—	—	11
		101	—	—	18
		103	—	—	32
	cream soap	862	—	—	6
	creme de nuit aerante	152	—	—	46
	creme jaspée	125	—	—	76
	eyebrow pencil	215	—	—	6
	automatic	226	—	—	19
	refill	227	—	—	9
	eye cream	1-113	—	—	12
	eye lash pomade	1-121	—	—	12
	eye liner	222	—	—	16
	with brush	222	—	—	19
	brush	221	—	—	8
	eye shadow stick	114	—	—	13
	pearly	114	—	—	14
	face powder	306	—	—	13
	facial lotion	431	—	—	12
		432	—	—	18
	formulayer	1-153	—	—	21
		1-151	—	—	32
	formuline				
	dry/normal	1-211	—	—	16
	greasy	1-201	—	—	16
	foundation cream				
	dry/normal	111	—	—	10
	hand cream	172	—	—	9
	Kajal	223	—	—	22
	lipstick brush	830	—	—	9
	lipstick refills	209	—	—	9
	presentation case (empty)	208	—	—	12
	liquid film	1236	—	—	11
	mascara complete	214	—	—	16
	refills	216	—	—	11
	massage cream	194	—	—	23
	Miss Ayer				
	invisible base	466	—	—	12
	rapid cleanser	463	—	—	12
	tonic lotion	461	—	—	12
	nourishing cream	1-911	—	—	14
	relax beauty mask	1182	—	—	22
	rich cream	193	—	—	18
	skin lotion	411	—	—	12
		412	—	—	18
	skin tan-cristal	610	—	—	25
	solid powder	311	—	—	15
	refill	312	—	—	10
	special day cream	1-223	—	—	13
	cream soap	870	—	—	7
	eye cream	1143	—	—	16
	night cream	1-193	—	—	16
	cleanser	1-496	—	—	16
		1-497	—	—	29
	lotion	1-433	—	—	19
		1-434	—	—	33
	lipstick base	1-210	—	—	10
	strawberry cream	141	—	—	16
	lotion	441	—	—	16
	sun cream white	162	—	—	10
	tinted	162	—	—	10
	sun milk white	1466	—	—	17
	tinted	1466	—	—	17
	toilet water	410	—	—	25
	total film	1436	—	—	17
	cream	131	—	—	38
		1131	—	—	65
	skin milk	1-431	—	—	23
	total mask	1-142	—	—	18
	Ayer tint	315	—	—	42
	eau de Cologne	650	—	—	22
		651	—	—	33

	eye cleanser	206	—	—	9 0
	lip gloss	204	—	—	9 6
	liquid formulayer				
		1-154	—	—	42 6
	make-up brush	320	—	—	27 6
	aven Sent (596 HR)				
	soap complexion (3)				
		4333	—	—	8 6
	bath (3)	4336	—	—	14 6
	lena Rubinstein (596 HR)				
	beauty case	8938	—	—	197 6
		8914	—	—	279 6
	eyeliner pencil refill				
		1764	—	—	4 6
	Herbessence	8024	—	—	21 0
	mascara remover pads				
		1742	—	—	7 6
	silk face powder				
		1201	—	—	9 6
		1202	—	—	16 6
	special	1221	—	—	9 6
		1222	—	—	16 6
	Strong and Long		—	—	25 0
	lene Curtis (597 HCL)				
	shampoo plus egg		27 0	6 9	3 11
	matrix (810 Maw)				
	suppositories		39 0	8 8	5 9
	minevrin (68 AH)†s4B				
	tablets	25	15 8ea	3 11ea	—
		100	50 9ea	12 8ea	—
		1000	457 6ea	114 4ea	—
	(107 BH&L)				
	arin (147 Boots)				
	etard 2mils	6	38 4ea	—	57 6
	xaphen (295 CM&R)				
		1qt	16 6ea	—	22 0
	(785 Macarthy)				
	o (792 M&GG)				
	tone (105 BTD)				
		116cc	42 10	10 8½	5 9
	Styler (1188 Steiner)				
	air spray	5oz	58 0	14 6	8 6
	ldfast (1573 Holdfast)				
	atex feed teat		29 6	—	—
			(1 gross)		
	ey Pine (785 Macarthy)				
	cough sweets		18 0	4 6	1 0
			(3 doz)	(3 doz)	
	oper's (Dr. John)(815 MR&Co.)				
	female pills		13 6	3 4½	2 0
			28 6	7 1½	4 0
	nut (631 Hudnut) existing entry				
	dnut (631 Hudnut)				
	asic Dew	678X	36 3	9 0	5 3
		676X	53 2	13 3½	7 8
	actus cleanser	512	58 8	14 8	8 6
	ream of Cactus				
		514	36 3	9 0	5 3
		511	79 4	19 10	11 6
	ashion Style				
	soft casual	202	38 3	9 6	5 6
		200	60 7	15 2	8 9
	very curly	201	60 7	15 2	8 9
	latter-Glo	613X	34 0	8 6	4 11
	air spray refill	713	17 4	4 4	2 6
	aerosol	711	42 10	10 8½	5 9
		710	48 4	12 1	6 6
	ight and Bright				
		9110	31 4	7 10	4 6
		12110	58 8	14 8	8 6
	oll Quick	700	13 10	3 5½	2 0
		991	38 3	9 6½	5 6
	alon Color	714/5	43 4	10 10	6 3
	hampoo with egg				
		sachet	5 4	1 4	9
		4oz	27 8	6 11	3 10
	tyle Set	500	21 6	5 4½	3 0
	lson's Eumenthol (619 HMO)				
	pastilles		17 2	4 4	2 6
	roSaluric (837 MSD) †s4B				
	blets 25mgm	100	23 6ea	—	35 3
		500	115 8ea	—	173 6
	50mgm	100	43 4ea	—	65 0
		500	209 6ea	—	314 3
	roSaluric-K (837 MSD) †s4B				
	blets	25	7 0ea	—	10 6
		100	26 8ea	—	40 0
		500	129 8ea	—	194 6
	ovit (378 Dista) both packs				
	on (218 Calmic) †				
	blets	10×10	125 0	31 0	1 10
		50	45 0	11 3	6 7
	e (77 Axa)†		—	—	—
	d (645 Ilford)				
	meras				
	Elmo 8-CZ		595 9ea	148 11ea	1042 6
	8-SS		708 0ea	177 0ea	1239 0
	8-EE		793 9ea	198 5ea	1389 0
	8-TL model 4		1514 3ea	378 7ea	2650 0
	model 6		1788 7ea	447 2ea	3130 0
	pocketauto		342 7ea	85 8ea	599 6
	portsmaster automatic				
			267 5ea	66 10ea	467 11
	case		39 4ea	9 10ea	68 7
	lashgun Sprite 35		10 7ea	2 8ea	18 6
	emicals				
	ango glazing solution				
		6oz	20 0	—	2 6
		20oz	48 0	—	6 0
	orrector solutions		52 0	—	6 6
	Hyfin developer		32 0	—	4 0
	Hypam fixer	10oz	42 0	—	5 3
	hardener	10oz	34 0	—	4 3
	ID-48 developer				
		80oz	48 0	—	6 0
	liquid acid hardener				
		80oz	120 0	—	15 0
	Metol	25gm	26 0	—	3 3
	Microphen developer				
		21oz	32 0	—	4 0
		88oz	48 0	—	6 0
	Photopake	small	20 0	—	2 6
		2oz	40 0	—	5 0
	PQ universal developer				
		20oz	54 0	—	6 9
	lamps, darkroom				
	No. 4		130 0ea	—	195 0
	No. 7		63 4ea	—	95 0
	No. 8		56 8ea	—	85 0
	junior		38 4ea	—	57 6
	projectors still				
	Elmo CS		199 8ea	—	299 6
	projectors cine				
	Elmo FP		466 4ea	—	699 6
	FP-A		866 8ea	—	1300 0
	AP8		951 8ea	—	1427 6
	TP 8		2260 0ea	—	3390 0
	thermometers				
	dish, photo		124 0	—	15 6
	wide scale		158 0	—	19 9
	trimmer guillotine				
	9in cut		31 8ea	—	47 6
	11in cut		86 8ea	—	130 0
	13in cut		118 0ea	—	177 6
	15in cut		136 8ea	—	205 0
	18in cut		185 0ea	—	237 6
	Indocid (837 MSD) †s4B				
	suppositories	12	20 0ea	—	30 0
	Inecto (1028 Rapidol)				
	Hair Magic		27 0	6 9	4 0
	Hi-lift bleach		27 0	6 9	4 0
	In Love (1376 Hartnell)				
	eau de toilette				
	spray mist	HL11	101 0	25 3	14 9
D		HL13	—	—	—
	Iron Jelloids (104 BP)				
			46 6	—	5 0
			79 0	—	8 6
	Isonien (393 DPL)				
	inhalant†	14mils	11 0ea	—	16 6
	tablets†s1s4A	50	5 4ea	1 4ea	9 4
	Jaslyn (1070 Windsor)				
	soap coal tar	2003	11 0	2 8	1 6
	JETset (1391 Swiffax)				
	electrically heated				
	hair roller kit		144 0ea	36 0ea	252 0
	Jeyes (671 Jeyes)				
	Freshbin dredger				
		1lb	13 6	—	1 6
	Jeypine (671 Jeyes) medium				
			15 3	—	1 8
	J. Rex (234 Cartwright)				
	juniper pills	60	15 6	3 10½	2 3
		120	22 6	5 7½	3 3
	Juicy Fruit (1223 TWC)				
	chewing gum				
		20pkts.	6 7½	11½	6
	K285 (147 Boots)				
	glove powder				
		1 kilo	11 6ea	—	17 3
		5 kilo	52 6ea	—	78 9
		12½ kilo	121 6ea	—	182 3
	Kantrex (171 BLL)TS				
	injection	0·5gm	18 0ea	—	27 0
		1·0gm	30 0ea	—	45 0
	Kemoform (853 Modkem)				
	balsam of aniseed				
		3oz	12 0	2 11	—
		6oz	19 0	4 8	—
	chest and lung mixture				
	adults	3oz	12 0	2 11	—
		6oz	19 0	4 11	—
	infants	3oz	12 0	2 11	—
		6oz	19 0	4 11	—
	Kent (693 Kent)				
	hairbrush Cosby "Allure"				
	debutante		12 0½ea	2 11ea	21 0
	refill		4 9½ea	1 2ea	8 4
	toothbrushes				
	"Pedigree"		26 0	—	3 3
	special soft		26 0	—	3 3
	"Stoutheart"		26 0	—	3 3
	"KB42" badger		50 0	—	6 3
	denture brush				
	"Clinic"		30 0	—	3 9
	Kerbina (694 Kerbina)				
	compound raspberry-leaf				
	tablets	50	20 0	5 0	2 11
		100	32 0	8 0	4 8
		300	84 0	21 0	12 3
	cramp tablets	50	20 0	5 0	2 11
	menopause tablets				
		50	20 0	5 0	2 11
	morning sickness tablets				
		50	20 0	5 0	2 11
	Kodak (711 Kodak)				
	cameras				
	Brownie 127		16 9½ea	4 2ea	30 0
	case		5 2ea	1 3ea	9 2
	outfit		42 7½ea	9 5ea	73 7
	Instamatic "200"		87 9ea	21 11ea	156 11
	outfit		118 3½ea	28 4ea	208 11
	Kopil (667 JCL)				
	camera				
	Super Eight	121	—	—	576 10
		321	—	—	999 9
		421	—	—	1290 9
	Lactol (67 Ashe)				
	bone		4 6	—	6
	drops		14 10	2 2	1 10
	Laevosan (218 Calmic)				
D	concentrate 40% 50 mils				
	La India (975 PDS)				
	deodorant stick		55 0	13 9	8 0
	olive oil pomade		28 0	7 0	4 6
			42 0	10 6	6 6
			57 0	14 3	8 11
	wonder pomade		30 6	7 7½	4 9
			50 0	12 6	7 9
			75 0	18 9	11 9
	Lanalem (338 Cussons)				
	hair spray		31 0	7 9	4 9
	Landers (PDS)				
	cold cream	5oz	48 0	12 0	7 0
	dry skin cream				
		5oz	48 0	12 0	7 0
	hand cream	5oz	48 0	12 0	7 0
D	6oz sizes		—	—	—
	Lashique (385 DG)				
			58 0	15 0	8 6
	Lasix (614 Hoechst)†s4B				
	ampoules 2mils	5	16 0ea	—	24 0
		25	75 11ea	—	113 10½
D	Laurodin (34 A&H) skin spray				
	Le Chic (852 Molyneux)				
	perfume	1221	92 11	22 8	13 6
		1222	14 1ea	3 5ea	24 6
D	Le De (Givenchy(480 FP) existing entry				
I	**Le De** (Givenchy(480 FP)				
	eau de toilette	2oz	15 6ea	3 8ea	28 6
		4oz	26 0ea	6 2ea	49 6
		8oz	44 6ea	10 7ea	82 0
		16oz	67 3ea	16 0ea	126 0
	atomiser		57 6ea	13 8ea	105 0
	refill		32 6ea	7 8ea	58 6
	perfume	⅛oz	19 0ea	4 6ea	35 0
		¼oz	30 0ea	7 1ea	55 0
		½oz	51 6ea	12 3ea	95 0
		1oz	79 6ea	18 10ea	147 0
		2oz	124 9ea	29 7ea	231 0
		4oz	194 0ea	46 1ea	357 0
	atomiser		38 0ea	9 0ea	70 0
	refill		23 6ea	5 7ea	42 0
	Ledercort (746 Lederle)TS				
	tablets 2mgm	30	16 4ea	—	24 6
		100	47 0ea	—	70 6
		500	218 2ea	—	327 3
	4mgm	30	29 6ea	—	44 3
		100	94 0ea	—	141 0
		500	429 10ea	—	644 9
	8mgm	30	50 8ea	—	76 0
		100	161 8ea	—	242 6
	Lederkyn (746 Lederle)†s4B				
	suspension	2oz	7 8ea	—	11 6
		16oz	54 4ea	—	81 6
	tablets	24	12 6ea	—	18 9
		100	46 8ea	—	70 0
		500	220 2ea	—	330 3
D	Le Dix (Balenciaga(480 FP) existing entry				
I	**Le Dix** (Balenciaga(480 FP)				
	eau de toilette	1¾oz	15 0ea	3 7ea	27 6
		4oz	24 0ea	5 9ea	44 0
		7¾oz	40 0ea	9 6ea	75 0
		15oz	59 0ea	14 0ea	108 6
		32oz	86 0ea	20 5ea	159 6
	atomiser		57 6ea	13 8ea	105 0
	refill		32 6ea	7 8ea	58 6
	perfume	⅛oz	12 9ea	3 0ea	23 6
		⅕oz	16 3ea	3 10ea	30 0
		¼oz	24 6ea	5 10ea	45 0
		½oz	41 0ea	9 9ea	75 6
		1oz	67 3ea	16 0ea	126 0
		2oz	99 6ea	23 7ea	186 0
		4oz	159 6ea	37 10ea	294 0
	atomiser		34 0ea	8 1ea	63 0
	refill		23 6ea	5 7ea	43 6
D	Le Gardenia Blanc (981 Picot)				
D	Le Muguet Fleuri (981 Picot)				
	Length'n Lash (385 DG)				
I	refill		75 0	19 0	11 0
	Le Numero Cinq (852 Molyneux)				
	bath oil	3320	68 10	16 9	10 0
	dusting powder				
		8081	15 9ea	3 10ea	27 6
	eau de Cologne				
	25cc	4040	8 4ea	2 0ea	14 6
	56cc	4041	12 7ea	3 1ea	22 0
	110cc	4042	21 6ea	5 3ea	37 6
	210cc	4043	35 3ea	8 7ea	61 6
	450cc	4044	63 7ea	15 6ea	112 6
	930cc	4045	113 10ea	27 9ea	198 6
	parfum de toilette				
	56cc	310	24 4ea	5 11ea	42 6
	110cc	320	42 9ea	10 5ea	74 6
	atomiser	3071	40 1ea	9 9ea	70 0
	refill	301	20 11ea	5 1ea	36 6
	perfume	1021	92 11	22 8	13 6
		1022	14 1ea	3 5ea	24 6
		1023	26 4ea	6 5ea	46 0
		1024	42 5ea	10 4ea	74 0
	25cc	1025	71 7ea	17 5ea	124 0
	56cc	1026	111 3ea	27 1ea	194 0
	atomiser	1072	35 10ea	8 9ea	62 6
	refill	1073	24 4ea	5 11ea	42 6

	soap toilet (3)	6080	7 2ea	1 9ea	12 6
	bath (1)	6081	4 3ea	1 0ea	7 6
	talcum powder				
		6087	6 7ea	1 7ea	11 6
		6088	11 2ea	2 9ea	19 6
	bubble bath				
	180cc	6093	14 4ea	3 5ea	25 0
	hair perfume				
	90cc	500	6 8ea	1 7ea	11 6
	Less (528 GM)				
	toothpaste		16 3	4 1	2 2
	Lestreflex (347 Dalmos)				
	elastic diachylon bandage				
	3in × 3yd		66 2	—	7 9
	4in × 3yd		86 2	—	10 0
	Le Train Bleu (981 Picot)				
	perfume miniature		44 6	11 1½	6 6
		¼oz	130 6	32 7½	19 0
		½oz	20 10ea	5 2½ea	36 6
		1oz	38 7ea	9 8ea	67 6
		2oz	66 0ea	16 6ea	115 6
	Lilia (761 Lilia-White)				
	sanitary belt		14 9	1 6	1 9
	Lilies of the Valley in Bloom (981 Picot)				
	perfume miniature		44 6	11 1½	6 6
		¼oz	130 6	32 7½	19 0
		½oz	20 10ea	5 2½ea	36 6
		1oz	38 7ea	9 8ea	67 6
		2oz	66 0ea	16 6ea	115 6
D	Limmisax (1262 UL)				
I	**Limmisax (1552 UL)**				
D	Limmits (1262 UL)				
I	**Limmits (1552 UL)**				
	Listerine (721 LC)				
	antiseptic	3oz	21 0	5 3	2 9
		7oz	38 2	9 6½	5 0
		14oz	59 2	14 9½	7 9
D	toothpaste				
	Livadex (179 BDH)				
D	ampoules 2mils	25			
D	vial	10mils			
D	oral 500mils & 2 litres				
	Livogen (179 BDH)				
D	2 litres				
	Lloyds Euxesis (20 Lloyd)				
	tube		22 0	5 6	3 3
	Locan (394 DF)†				
	suppositories	12	36 0	9 0	5 3
	Locorten-Vioform (262 CIBA)T5				
	cream	15gm	118 0	—	14 9
	ointment	15gm	118 0	—	14 9
	paste	15gm	118 0	—	14 9
	L'Onglex (256 CPL)				
	liquid polish pearl		16 4	4 2	2 3
	Long Life (898 Northern)				
	lozenges		15 6	3 10	2 0
			34 6	8 7	4 6
	Lotos (427 Esso)				
	(distributors 1006 PI)				
	air freshener		31 6	—	3 6
D	Loving Care (172 BMCL)				
I	**Loving Care (265 Clairol)**				
	Macdonald (786 Macdonald)				
	household cotton wool				
	carton	4oz	13 0	—	1 6
	polythene bag	3oz	8 8	—	1 0
		16oz	33 0	—	3 9
	Maclean (104 BP)				
	indigestion tablets		9 8	2 3	1 3
			17 6	4 0½	2 3
			33 1	7 8	4 3
	powders		23 4	5 5	3 0
			33 9	7 10	4 4
	Macrodex (1497 PGBL)				
	(distributors 802 MS)				
	solution	500mils	23 0ea	—	—
	Magnificence (852 Molyneux)				
	perfume	1121	92 11	22 8	13 6
		1122	14 1ea	3 5ea	24 6
	Maigrilyne (100 BI)				
	algae fat reducing treatment				
			—	—	42 0
	super active		—	—	57 6
	Mamysan (38 ASP)				
	-baby milk food		61 0	—	6 9
I	**Manoids (1467 AP&T)**				
	tablets	30	42 0	10 6	6 2
		70	68 0	17 0	9 11
D	Marbadal "C" (452 FBA)				
D	Marmaduke Firths (898 Northern)				
D	Marsanta (1085 RB)				
I	**Marsanta (409 EH)**				
	Maspo (100 BI)				
	lilliput vibrator		—	—	168 0
	de luxe		—	—	210 0
	accessories				
	face roller		—	—	27 6
	glaser's blade		—	—	15 6
	nylon hedgehog		—	—	12 6
	resonance bow		—	—	29 6
	spindle		—	—	17 6
	suction bell		—	—	8 6
	vacuum bust cup		—	—	52 6
	Matmed (853 Modkem)				
	baby cream		10 6	2 6	—
			19 0	4 11	—
I	chilblain cream		12 0	2 11	—
	embrocation	4oz	20 0	4 11	—
	pile ointment		20 0	4 11	—
D	Matthew's (1085 RB)				
I	**Matthew's (409 EH)**				

	Maws (810 Maw)				
	feeders				
	dinky polythene				
		360.10	22 0	—	2 9
	Max Factor (813 MF)				
I	eye pencil self-sharpening				
			86 0	20 5	12 6
	refill		20 8	4 11	3 0
	lip frosting		38 0	9 0	5 6
	lipstick		38 0	9 0	5 6
	lipstick non-allergic		41 4	9 10	6 0
	nail base coat		26 0	6 2	3 9
	top coat		26 0	6 2	3 9
	nail build		26 0	6 2	3 9
	nail polish		24 0	5 8	3 6
	iridescent		31 4	7 5	4 6
	for men				
	Clear-gel		40 0	9 6	5 9
D	nail finish				
D	nail prime				
D	nail polish old size				
D	iridescent old size				
	Maybelline (1054 R&A)				
	Ultra Shadow		65 0	16 3	9 6
	Medicaire (295 CM&R)				
	large		102 6	25 0	13 6
	Medilax (1457 PP Ltd.)				
D	pellets	22			
I	**Melody (509 Gibbs) ‡**				
	Mem (900 Norton)				
	all purpose lotion				
	plastic bottle	4oz	99 0	24 9	14 6
	glass bottle	4oz	156 0	39 0	21 6
		8oz	255 0	63 9	37 6
D	Mennen (451 F&J)				
	Methral (969 Pfizer) T5V5O				
	injection vial				
		20mils	15 0ea	—	—
		50mils	36 0ea	—	—
	Methyltestosterone (917 Organon) †s4B				
	Sublings 10mgm	25	5 8ea	—	8 6
		100	19 10ea	—	29 9
		500	93 4ea	—	140 0
I	**Metrawatt (673 J of H)**				
	exposure meters				
	Horvex 3		—	—	154 0
	case		—	—	22 6
	Metraphot 3		—	—	199 5
	case		—	—	15 9
	Metrastar		—	—	598 8
	case		—	—	39 6
	Midicel (938 PD)†s4B				
	suspension	60mils	92 0	—	11 6
		16oz	54 4ea	—	81 6
	tablets	12	74 0	—	9 3
		100	46 8ea	—	70 0
		250	110 0ea	—	165 0
	Midnight (385 DG)				
	bath essence	intro	40 0	10 0	5 9
		1oz	63 0	16 0	9 3
		2oz	100 0	25 0	14 6
	dusting powder				
		plastic	59 0	15 0	8 6
		drum	96 0	24 0	14 0
	hand & body lotion				
		4oz	89 0	22 0	13 0
	perfume	purse	93 0	23 0	13 6
		½oz	20 10ea	5 2ea	36 6
	perfume spray mist		130 0	32 6	19 0
	puffer spray		86 0	21 6	12 6
	skin perfume	intro	40 0	10 0	5 9
		1oz	63 0	16 0	9 3
		2oz	100 0	25 0	14 6
		4oz	151 0	38 0	22 0
		8oz	18 10ea	4 8ea	33 0
	Milk of Magnesia (976 PS&T)				
	liquid	12oz	37 0	9 3	4 11
D	Mimosept (347 Dalmas)				
	Minims (1154 S&N)†s1				
	hyoscine hydrobrom. 0·2%	20			
	Mink (1188 Steiner)				
D	perfume	1oz			
D	toilet water				
	Minolta (667 JCL)				
	camera				
	Autopak-8KS		—	—	1999 6
	case		—	—	158 8
I	**Minox (673 J of H)**				
	camera B		—	—	1720 6
	black satin finish		—	—	1964 6
	projector Minomat N		—	—	1450 0
D	Min-Skels (1152 SK)				
	Mint-Skels (1152 SK)				
		85gm	19 3	2 10¾	2 6
	Molyneux (852 Molyneux)				
I	lipsticks		6 0ea	1 6ea	10 6
	Morny (862 Morny)				
	perfume spray mist		—	—	17 6
D	luxury mist perfume				
	Mountant (673 J of H)				
	size 2 tube		12 7	3 2	1 10½
	size 6 tube		26 0	6 6	3 9
	jar	24oz	44 0	11 0	6 6
	Multivite (179 BDH)				
	syrup	115mils	40 0	—	5 0
		500mils	13 9ea	—	20 7
I	**Myalgin (853 Modkem)**				
	cream	2oz	33 0	—	—
		1lb	16 6ea	—	—
	tablets	50	28 0	6 10	—
	Myanesin (179 BDH)				
D	ampoules 10%	6			

	Mycifradin (1263 Upjohn)T5				
	tablets 0·5gm	20	37 6ea	—	
	Mycivin (147 Boots)T5				
	syrup	170mils	33 6ea	—	50
	Naclex (518 Glaxo)				
D	tablets 25mgm				
	Nair (235 Carteret)				
	cream	sachet	14 1 (1 doz)	3 6 (1 doz)	1
	Natrodale (1513 Rodale)				
	Dolomite magnesium tablets				
		100	4 6ea	—	6
		300	12 6ea	—	16
		500	18 0ea	—	27
	rose hip capsules 200mgm				
		50	8 8ea	—	1
		200	31 8ea	—	47
		350	50 0ea	—	75
	N.C.A. (295 CM&R)†s1				
	worm drench	10oz	166 6	41 0	21
		40oz	48 9ea	11 10ea	76
	Neo-Cytamen (518 Glaxo)				
	veterinary ampoules				
	1000 vials	10mils	9 6ea	—	12
	Nembutal (2 Abbott)†s1s4A				
	veterinary solution				
		100mils	7 6ea	—	11
D	Nescafe (883 Nestle) existing entry				
I	**Nescafe (883 Nestle)**				
	sachets	72	75 5 (⅜ doz)	—	
	tin	1oz	65 7 (4 doz)	—	
		2oz	124 0 (4 doz)	—	
		4oz	114 9 (2 doz)	—	
		8oz	108 6 (1 doz)	—	
	blend 37	2oz	34 6	—	
		4oz	65 10	—	
	Nestle (451 F&J)				
	Nestle Lite		46 3	11 7	6
	Netovax (208 BW)VPO				
	vaccine (vet.)				
		50mils	18 0ea	—	24
		250mils	84 4½ea	—	112
	Neutraphylline (292 C)				
D	with phenobarb. tablets and suppositories				
	Never Mist (1412 Jackel)				
	eyeglass cleaner		16 0	—	2
	refill		60 0	—	7
I	**Nevroids (1467 AP&T)**				
	tablets	30	42 0	10 6	6
		70	68 0	17 0	9
	New Masque Frappe (385 DG)				
			58 0	15 0	8
	New-skin (104 BP)				
			27 10	—	3
	N.H.&S. (853 Modkem)				
	balm	1oz	20 0	4 11	
		2oz	33 0	8 0	
		4oz	58 0	14 2	
		1lb	14 0ea	3 5ea	
D	Nice'n Easy (172 BMCL)				
I	**Nice'n Easy (265 Clairol)**				
	Ninona (210 B&C)				
	washing squares		16 6	—	2
	Nivea (1164 SSL)				
	creme	362	13 9	3 5	2
	shaving cream	280	22 2	5 5	3
	soap	1103	8 1	2 0	1
	bath size	1104	12 7	3 1	1
	Nixir (529 Gorney)				
	after shave milk		48 0	12 0	7
	Noa Noa (596 HR)				
	soap toilet (3)	7334	—	—	15
	Nopain (898 Northern)				
	tablets		32 0	8 0	4
	Nopaine (1000 PPL)				
	first aid spray	4oz	34 0	8 6	5
		6oz	54 8	13 8	8
	Noradran (897 NC)				
	aerosol †		132 0	—	16
	Noshok (453 Fecher)				
	caustic pencils		5 7	1 5	
	Novavon (100 BI)				
	audio-sonic vibrator		—	—	315
	N.P.U. (810 Maw)				
	cosmetic bags		9 4	2 4	1
	toothbrushes				
	bristle hard or med.		22 0	—	2
	junior nylon		8 0	—	1
	junior bristle		12 0	—	1
	standard nylon		12 7	—	1
	vacuum Nu-flask		51 0	5	6
	Nu-Cot (810 Maw)				
I	wool	12oz	29 8	—	3
	Nulon (1037 Reckitt)				
	hand cream	C	14 8	3 4¾	1
		B	20 7	4 9¼	2
		A	30 0	6 11¼	4
	tube		14 8	3 4¾	1
	Nutbrawn (535 Granose)				
		10oz	25 7	—	2
	Odo-Ro-No (493 Gambles)				
	cream	28gm	21 10	5 6	3
	liquid regular	25gm	18 3	4 7	2
	roll on	35gm	29 2	7 4	4
	stick unperfumed				
		14gm	20 0	5 0	2

	d Spice (1131 Shulton)				
	after-shave lotion				
		3712	43 9	10 8	6 6
	presentation pack				
		3711	117 6	28 8	17 6
	talcum	3734	40 3	9 10	6 0
	body talcum	3740	63 9	15 6	9 6
		3742	40 3	9 10	6 0
	Cologne for men				
		3722	52 0	12 8	7 9
	deodorant spray				
		3230	43 9	10 8	6 6
	hair groom tonic				
		3940	62 3	15 2	9 3
	pre-electric shave				
		3611	62 3	15 2	9 3
	roll-on	3640	62 3	15 2	9 3
	shampoo for men				
		3950	62 3	15 2	9 3
	shave mug	3700	84 0	20 6	12 6
	refill	3701	45 3	11 0	6 9
	super smooth shave				
		3692	65 6	16 0	9 9
	Cologne for men lime				
		3520	106 0	25 10	16 6
	ympus (1017 Pullin)				
	camera				
	Pen EM with case		—	—	1140 0
	nnopon (1074 Roche)†s1DD				
	Tubunic ampoule syringe 30mgm/mil.				
	llon (1278 VD)				
	(distributors 1310 WW)				
	tabs (175 BCP)†				
	abase (1176 Squibb)				
	paste	15gm	42 0	10 6	6 1½
		80gm	11 0ea	2 9ea	19 3
	hesive (1176 Squibb)				
	powder	15gm	66 0	16 6	9 7½
	alene (898 Northern)				
	mouth wash	8oz	21 0	5 3	3 0
		20oz	42 0	10 6	5 6
		80oz	11 0ea	2 9ea	—
	l ou Non (Langeais(480 FP)				
	eau de toilette	2oz	15 0ea	3 7ea	27 6
		4oz	24 0ea	5 9ea	44 0
		8oz	40 0ea	9 6ea	75 0
	perfume	⅛oz	12 6ea	2 11ea	23 0
		¼oz	23 6ea	5 7ea	42 0
		½oz	41 0ea	9 9ea	77 6
		1oz	60 0ea	14 9ea	112 6
		2oz	95 0ea	22 7ea	175 0
	atomiser		33 6ea	8 0ea	63 0
	refill		23 6ea	5 7ea	42 0
	r Jim (1467 AP&T)				
	dog ointment		15 0	3 9	2 3
	ord (107 BH&L) liniment				
	ymycin (1515 CD)TS				
	tablets	16	16 8ea	—	—
	an (981 Picot)				
	perfume miniature		44 6	11 1½	6 6
		¼oz	130 6	32 7½	19 0
		½oz	20 10ea	5 2½ea	36 6
		1oz	38 7ea	9 8ea	67 6
		2oz	66 0ea	16 6ea	115 6
	molive (280 CP)				
	fter shave lotion		36 4	9 1	4 9
	re-electric shave		36 4	9 1	4 9
	deine Co (97 Bayer) †				
	blets	10	20 0	5 0	2 11
	dol (97 Bayer)				
	lixir	60mils	36 0	—	4 6
		1 litre	43 4ea	—	65 0
	agesic (898 Northern)†				
	ablets		32 0	8 0	4 6
	ador (430 Eucryl)				
	loral disinfectant		24 9	—	2 9
	amez (649 ICI)†s4B				
	vet.)	120mils	4 2ea	—	6 3
		600mils	19 4ea	—	29 0
		½gall	58 0ea	—	87 0
	ke-Davis (938 PD)				
	accine cholera 10mils				
	anit (501 Geigy) all packs				
	kalium (521 Glenwood)				
	owder	1lb	55 8ea	—	74 3
	tamol (179 BDH)				
	inctus	60mils			
	trol (234 Cartwright)				
	ntiseptic pastilles†		18 0	—	2 3
	lozenges		16 0	—	2 0
	uick rub		17 0	4 3	2 6
	blets†	15	14 9	3 8	2 3
		50	30 0	7 6	4 3
	cillin-V (413 Lilly)TS				
	ulvules 125mgm				
		100	21 0ea	—	31 6
		500	102 6ea	—	153 9
		1000	200 0ea	—	300 0
	250mgm	100	40 6ea	—	60 9
		500	200 0ea	—	300 0
		1000	395 0ea	—	592 6
	tovis (1310 WW)†s4B				
	nastrate (975 PDS)				
	kit		216 0	54 0	30 0
	nna (438 ER)				
	onna (438 ER)				
	zor blades				
	njector	5	24 0 (12pkts)	6 0 (12pkts)	3 6
	uper stainless	7	40 0 (20pkts)	10 0 (20pkts)	3 6
	Petri (637 Hunter)				
	camera Auto Rapid		—	—	715 0
	case		—	—	66 3
	Phelps Brown's (1214 Teasdale)				
	agar cream		16 0	4 0	2 6
			30 0	7 6	4 3
	shampoo				
	oil cade	4oz	17 0	4 3	2 6
		8oz	30 0	7 6	4 6
	pine tar	2oz	11 0	2 9	1 6
		4oz	20 0	5 0	2 9
	Phenovis (649 ICI)				
D	tablets 1gm all sizes				
	Phosferine (1082 RKO)				
	tonic wine ½ bott				
		24	131 6	—	7 3
		bott	121 9	—	13 6
	Phospherine (104 BP)				
	liquid		18 9	4 4	2 5
			41 6	9 7	5 4
	tablets		18 9	4 4	2 5
			41 6	9 7	5 4
	Phyldrox (228 Carlton)†s1s4A				
	syrup	4oz	54 0	—	6 3
		40oz	40 0ea	—	—
	Phyllosan (104 BP)				
	tablets		39 6	—	4 3
			63 6	—	6 10
			127 10	—	13 9
	Phytoferol (179 BDH)				
D	capsules 50mgm	500			
	Pickles (982 Pickles)				
	Liptrex		6 8	1 8	1 0
D	**Pino Silvestrye (529 Gorney) products**				
	Pituitrin (938 PD)				
D	ampoules 0·5mil	100			
D	1mil	100			
	Plantoids (430 Eucryl)				
I	standard		22 6	—	2 6
I	**P.L.F. (1467 AP&T)**				
	capsules	30	42 0	10 6	7 6
	pills	30	40 6	10 1½	5 11
	Polaroid (989 Polaroid)				
I	sunglasses	131	21 10ea	3ea	33 0
D		728	35 10ea	3ea	54 0
	Poli-grip (1178 Stafford)				
	denture cream				
		49gm	31 4	—	3 11
	Poly (721 LC)				
	dye remover		38 0	9 6	5 6
	hair conditioner		32 10	8 2½	4 9
	Polyblonde (721 LC)				
			38 0	9 6	5 6
	Polycolor (721 LC)‡				
			38 0	9 6	5 6
	Polyfair (721 LC)				
			38 0	9 6	5 6
	Polyhairset (721 LC)				
	clear		10 5	2 7	1 6
	tinting		17 4	4 4	2 6
D	spray				
	Polylock (721 LC)				
	small		38 0	9 6	5 6
	large		62 4	15 7	8 11
	Polytint (721 LC)‡				
			43 8	10 11	6 3
	Ponderax (1123 SLL)				
	(distributors 1556 Farillon)				
	tablets	50	21 0ea	—	31 6
		100	38 0ea	—	57 0
		1000	340 0ea	—	—
	Pond's (256 CPL)				
	cold cream jar				
		16gm	14 7	3 8	2 0
		42gm	23 8	5 11	3 3
		85gm	40 0	10 0	5 6
		198gm	69 0	17 4	9 6
	dry skin cream jar				
		15gm	14 7	3 8	2 0
		42gm	23 8	5 11	3 3
		92gm	40 0	10 0	5 6
	foundation cream jar				
		17gm	14 7	3 8	2 0
		42gm	23 8	5 11	3 3
		85gm	40 0	10 0	5 6
	talcum Dreamflower				
		78gm	16 4	4 1	2 3
	vanishing cream jar				
		17gm	14 7	3 8	2 0
		50gm	23 8	5 11	3 3
		92gm	40 0	10 0	5 6
	Portyn (938 PD)				
	Kapseals	30	62 0	—	7 9
		250	40 10ea	—	61 3
	Posner's (975 PDS)				
	Guiche		100 0	25 0	14 6
	Potaba + 6 (521 Glenwood)				
	capsules 0.5gm	240	46 6ea	—	62 0
	P.Q. (673 J of H)				
	contrast	1gall	20 8ea	—	31 0
		5gall	93 4ea	—	140 0
	universol	1gall	20 8ea	—	31 0
		5gall	93 4ea	—	140 0
	Prednisolone (938 PD)TS				
	tablets 5mgm	100	180 0	—	22 6
		500	67 6ea	—	101 3
	Prednisone (938 PD)TS			—	
	tablets 5mgm	100	180 0	—	22 6
		500	67 6ea	—	101 3
	Prednisone (1263 Upjohn)TS			—	—
	tablets 5mgm	100	15 0ea	—	—
		500	67 6ea	—	—
	Prenatal (746 Lederle)				
	Dri-Kaps	100	18 0ea	—	27 0
		1000	149 10ea	—	224 9
	Prepacol (349 Damancy)				
	granules	100gm	7 2ea	1 9ea	12 6
	Pretty Feet (1164 SSL)				
	bottle	350	30 7	7 6	4 6
	roll ball	351	34 3	8 5	5 0
	Prince Regent (1006 PI)				
	pine disinfectant				
		½gal	45 0	—	6 0
		1gal	80 0	—	10 6
	Procafin (452 FBA)				
D	ampoules 5mils	5			
	Pro-Gen (2 Abbott)†				
	premix	5lb	18 1ea	4 6½ea	27 1
		10lb	165 0ea	41 3ea	247 6
	sodium sachets				
		6×1oz	34 3ea	8 7ea	51 4
	Prokayvit (178 BDH)				
D	ampoules 5mgm	6			
D	tablets 5mgm	500			
	Protein (1412 Jackel)				
D	styling lotion	4oz			
	Proteiset (1412 Jackel)				
	styling lotion	4oz	34 0	8 6	4 11
	Punch and Judy (528 GM)				
	toothpaste		16 3	4 1	2 2
	fluoride		16 3	4 1	2 2
I	**Pynefume (853 Modkem)**				
	inhalant		16 9	4 1	—
D	**Quadrille (Balenciaga(480 FP) existing entry**				
I	**Quadrille (Balenciaga(480 FP)**				
	eau de toilette	1¾oz	15 0ea	3 7ea	27 6
		4oz	24 0ea	5 9ea	44 0
		7½oz	40 0ea	9 6ea	75 0
		15oz	59 0ea	14 0ea	108 6
		32oz	86 0ea	20 5ea	159 6
	atomiser		57 6ea	13 8ea	105 0
	refill		32 6ea	7 8ea	58 6
	perfume	⅛oz	12 9ea	3 0ea	23 6
		⅙oz	16 3ea	3 10ea	30 0
		¼oz	24 6ea	5 10ea	45 0
		½oz	41 0ea	9 9ea	75 6
		1oz	67 3ea	16 0ea	126 0
		2oz	99 6ea	23 7ea	186 0
		4oz	159 6ea	37 10ea	294 0
	atomiser		34 0ea	8 1ea	63 0
	refill		23 6ea	5 7ea	43 6
	Quatrasol (393 DPL)				
	lotion	28mils	96 0	24 0	14 0
	Quick Action (322 Cripps)				
I	cough remedy	6oz	17 0	4 3	—
	Quinolor (1176 Squibb)				
	ointment	1oz	24 0	—	3 0
	Radiomulsin (179 BDH)				
	bottle	115mils	41 0	—	5 1½
		500mils	147 0	—	18 4½
		2litres	41 8ea	—	62 6
	Radiostol (179 BDH)				
D	pellets				
	Radiostoleum (179 BDH)				
I	capsules	500	100 0	—	12 6
D		1000			
	Radway's (573 JH)				
	ready relief		33 6	8 4½	4 8
	Rainette (82 Balfour)				
	hair lacquer				
	squeeze spray	60cc	18 8	4 5	2 9
	refill	33cc	10 0	2 5	1 6
		63cc	14 6	3 6	2 3
	Reaffirm (385 DG)				
			25 2ea	6 4ea	44 0
	Redi Splint (938 PD)				
	hand and wrist		35 6ea	—	—
	half arm		45 11ea	—	—
	full arm		53 7ea	—	—
	foot and ankle		53 7ea	—	—
	half leg		71 0ea	—	—
	full leg		78 3ea	—	—
	athletic (full leg)		95 0ea	—	—
	emergency kit		333 0ea	—	—
	Reedette (1169 GS&S)				
	toothbrush holder		37 0	3 8½	4 11
	Regula (980 Photopia)				
	camera				
	Sprinty BC		—	—	307 6
	case		—	—	57 3
	Renoir (898 Northern)				
	shampoo				
	lacquer removing		18 6	4 7	2 6
	mini mink		14 11	3 8	2 0
			26 0	6 6	3 6
	turtle oil cream		32 0	8 0	4 6
	soap		9 0	2 3	1 3
	Resochin (452 FBA)				
D	tablets	1000			
	Respenyl (324 Crookes)				
	tablets	25	35 0	—	4 4½
		100	114 0	—	14 3
D	**Revivex (597 HCL) hair conditioner**				
	Revlon (1052 Revlon)				
I	lipstick brush	0529	117 6	29 4½	17 6
	nail enamel frosted				
		0111	53 9	13 5	8 0
	translucent	0103	53 9	13 5	8 0

I	Silicare medicated	0392	90 9	22 8	13 6
	Super Natural	0358	84 0	21 0	12 6
D		0975			
	Rexall (1053 Rexall)				
	codeine co. tablets †	25	10 0	—	—
		50	18 0	—	—
		100	30 0	—	—
	electric blanket single		48 0ea	12 0ea	79 11
	double		66 0ea	16 6ea	110 0
	foam shampoo aerosol		35 6	8 10½	4 11
	glycerine, lemon & honey	4oz	12 0	—	—
	hand cream aerosol		35 6	8 10½	4 11
	personal deodorant aerosol		35 6	8 10½	4 11
	rubber gloves lined		27 6	2 9	3 6
	zinc & castor oil cream	2oz	8 6	—	—
		4oz	14 6	—	—
D	bath cubes				
D	baby powder				
D	black cough mixture				
D	brewers yeast flakes				
D	cleansing cream				
D	deodorant spray				
D	hair cream				
D	hand lotion				
D	shampoo				
D	shaving stick				
D	talcum powder				
D	toilet soap				
D	toothbrush				
D	toothpaste				
I	**Rexalve** (1053 Rexall)				
	antiseptic cream		20 0	—	2 6
	Rexprin (1053 Rexall)				
I	tablets	20	17 6	4 4½	2 6
	Rheomacrodex (1497 PGBL)T5 (distributors 802 MS)				
	10% in dextrose	500mils	40 0ea	—	—
	10% in normal saline	500mils	40 0ea	—	—
	Robitussin (1071 Robins)	20oz	24 0ea	—	36 0
		80oz	82 8ea	—	124 0
	Roccal (97 Bayer)				
	antiseptic	80oz	150 0	—	18 9
	Royal Sweden (1412 Jackel)				
	bath brush	12285	168 0	42 0	24 6
	hair brushes ladies	1984	120 0	30 0	17 6
		15244	102 0	25 6	14 11
	nail brush	13210	68 0	17 0	9 11
	hair brushes				
D	Ballerina 15268				
D	special acetate 15244				
D	Kontur 15209, 15210				
D	Slim-line 15241, 15242				
	Rue Royale (852 Molyneux)				
	perfume	1821	92 11	22 8	13 6
D		1822	—	—	—
	S3 (1188 Steiner)				
	shampoo	sachet	7 3	1 10	1 1
D		No. 2			
	Saf-T-Coil (1574 DBMP)				
	intra-uterine device		—	—	29 0
	Salazopyrin (1497 PGBL)†s48 (distributors 802 MS)				
	tablets 0·5gm	100	30 8ea	—	46 0
		500	114 8ea	—	172 0
	En-tabs	100	36 10ea	—	55 3
	Sanamycin (452 FBA)				
D	ampoules 200mcgm	25			
	Sanescol (878 Napp)†				
	powder	60gm	39 0	—	—
	Sanpic (1037 Reckitt)				
	large	8	20 5	—	2 3
	Satinex (1104 Satinex)				
	2-ply twins		16 6	—	2 4
	sulphite toilet rolls		4 6	—	6
	handkerchief tissues	100	8 10	—	1 0
		200	14 0	—	1 9
		300	16 6	—	2 6
	men size		16 6	—	2 9
	Satura (385 DG)				
	moisture cream	1oz	77 0	19 0	11 6
		2oz	136 0	34 0	19 9
	lotion	2oz	103 0	26 0	15 0
		4oz	181 0	45 0	26 6
	sheen		61 0	15 0	9 0
	Savlon (649 ICI)				
	antiseptic cream	120gm	71 0	—	8 3
	Schacht (1220 CT)				
	colostomy appliance		40 0ea	—	50 0
	spares				
	elastic belt		8 0ea	—	10 0
	foam sponge rings		1 7ea	—	2 0
	plastic flange rings		8 4½ea	—	10 6
	plastic locking rings		8 4½ea	—	10 6
	polythene bags (100)		12 0ea	—	15 0

	Scholl's (Dr.) (1108 SMC)				
	adhesive moleskin		10 0	—	1 3
	animal wool		10 0	—	1 3
	anti-pressure pad		14 0	—	1 9
	bunion spring		14 0ea	—	21 0
	protector		84 0	—	10 6
	shield (slim foam)		14 0	—	1 9
	corn shields, latex foam		16 0	—	2 0
	felt corn and bunion pads		12 0	—	1 6
	self adhesive		14 0	—	1 9
	Fixo corn plasters		9 4	2 4	1 6
	foam cushion pads		14 0	—	1 9
	foot Easer	pr.	25 0ea	—	55 0
	hammer toe spring		9 0ea	—	13 6
	heel grip (superluxe)	pr.	9 6	11	1 3
	insoles				
	latex foam men's		13 0	1 4	1 9
	women'		13 0	1 4	1 9
	Korrecto arch support	pr.	25 0ea	—	55 0
	Kurotex pads		14 0	—	1 9
	Met-lift supports	pr.	68 0	—	8 6
	Protecto cushions		14 0	—	1 9
	Tarso pads		12 0	—	1 6
	toe separators		8 0	—	1 0
	Tru-Span arch support	pr.	25 0ea	—	55 0
	Zino pads		11 0	2 9	1 9
	Scolaban (208 BW)VPO				
	tablets (vet.)	25	24 9ea	—	33 0
	Sea-legs (179 BDH)†s7				
	tablets	16	24 0	—	3 0
	Sea Witch (509 Gibbs) ‡				
	Sebosyn (1188 Steiner)				
D	No. 2				
	Secret of the Sea (385 DG)				
	cream	29mils	15 1ea	3 9ea	26 6
		58mils	26 2ea	6 7ea	47 6
	emulsion	40mils	19 9ea	4 11ea	34 6
	Sedestran (501 Geigy)				
D	tablets	25			
D	Sedormid (1074 Roche) tablets				
	Sequens (413 Lilly) †s48				
	tablets	20	7 0ea	—	10 6
	Setlers (104 BP)		18 9	4 4	2 5
			29 10	6 11	3 10
		boxes of 24	159 0	36 9	11
	Sheer Elation (385 DG)				
	cream powder compact		69 0	17 0	10 0
	refill		48 0	12 0	7 0
	face powder		61 0	15 0	9 0
	Sheer Velvet (385 DG)		61 0	15 0	9 0
	Sherleys (67 Ashe)				
	Coatacine spray		41 6	10 1	5 9
	Shloer (103 BF)				
	liquid apples	10oz	14 10	2 2½	1 9*

*Includes 3d for container

	Silver-Tex (1203 Surex)				
	protectives, teat		60 0 (1 gross)	—	3 0
	Silvikrin (105 BTD)				
	hair cream	74cc	16 9	4 2½	2 3
		150cc	24 10	6 2½	3 4
	hair dressing	74cc	22 4	5 7	3 0
		164cc	33 6	8 4½	4 6
	shampoo liquid	34cc	13 7	3 5	1 10
		70cc	22 4	5 7	3 0
	cream or lemon	70cc	22 4	5 7	3 0
	Sinthrome (501 Geigy)				
D	tablets 4mgm	20			
	Sixty-Six (1188 Steiner)				
D	perfume				
	Skels (1152 SK)				
	blackcurrant	4oz	19 3	2 10¾	2 6
	old English assortment	4oz	19 3	2 10¾	2 6
	Sloan's (721 LC)				
	liniment		19 8	4 11	2 9
	Smart Set (1188 Steiner)	5oz	58 0	14 6	8 6
	Smith Kendon (1152 SK)				
	diet chocolate plain, milk or nut milk	1oz	15 6 (2 doz)	2 4 (2 doz)	1 0
	Snopleat (1155 S&N)				
	absorbent wool		10 0	—	1 3
	Sof-Set (813 MF)				
	hair spray aerosol		46 8	11 1	6 9
	Solprin (1037 Reckitt)	dp 500	12 3ea	—	17 2
	Sombrero (1532 Care)				
	cream tube		24 1	5 10½	3 6
	suntan oil		25 9	6 3¼	3 9
D	**Soothe** (1262 UL)				
I	**Soothe** (1552 UL)				
	Soraya (100 BI)				
	six eye wrinkle treatment		—	—	27 6
	twelve eye wrinkle treatment		—	—	42 0
	refill pads (3)		—	—	12 6

I	**Sotradecol** (802 MS)					
	1%	30cc	24 0ea	6 0ea		4
	3%	10cc	24 0ea	6 0ea		4
	Southalls (1164 SSL)					
	baby pants med. and large		12 4		—	
	sanitary towels luxury soft	size 1	23 2		—	
		size 2	27 2		—	
D	original		—		—	
	Spa (1167 Spa)					
	bath set	351/2	61 4	15 4		
	clothes brush kangaroo		34 3	8 7		
	hairbrush gent's	453	112 0	28 0		
	Sparine (1352 Wyeth)†s4B					
	tablets 100mgm	50	15 2ea	—		2
		250	70 2ea	—		9
	Special Appointment (385 DG)					
	bath concentrate		123 0	31 0		1
	dusting powder plastic		62 0	16 0		
	perfume spray mist		130 0	32 6		1
	puffer spray		86 0	21 6		1
	skin perfume		123 0	31 0		1
	Spray Net (597 HCL)					
	hair spray	16oz	59 0	14 5		
D		8oz				
	hair spray	6oz	33 7	8 2		
	refill		9 2	2 3		
	Spray 'N Stay (256 CPL)					
	hairspray aerosol	175gm	40 0	10 0		
		300gm	69 2	17 3½		
	Sprenger (100 BI)					
	facial vapour bath		—	—		21
	spare aromatic bottle		—	—		
	spare plastic mask		—	—		2
	Steedman's (1406 Steedman)					
	soothing powders	9	14 0	3 6		
		27	45 6	11 4½		
	teething jelly		19 5	4 10		
D	soothing powders old packs					
	Steiner (1188 Steiner)					
I	eyelashes fur		108 0	—		1
I	laquer sheen	5oz	58 0	14 6		
	pearl foam shampoo sachet		6 10	1 8		
	postiche adhesive		12 0	—		
D	eau de Cologne					
D	eau dentifrice No. 1 and No. 2					
D	gunmetal rinse No. 2					
D	handmilk slimline					
D	setting lotion					
	Steinerfix (1188 Steiner)		12 0	—		1
	Stemcol (1006 PI)					
D	cough emulsion 12oz					
D	Steroxin (501 Geigy) existing entry					
	Steroxin (501 Geigy)					
	ointment	30gm	27 0	—		3
		120gm	78 0	—		9
	hydrocortizone cream T5	15gm	90 0	—		11
	Stimula (107 BH&L)					
	cream liniment	tube	30 0	7 6		4
	Suave (597 HCL)	16oz	44 9	10 11		6
	Suba-Seal (479 WF)					
	teat heat moulded	IC17	6 0	—		
	wide neck	IC40	6 0	—		
	Suede (981 Picot)					
	perfume miniature		51 6	12 10½		7
		¼oz	154 0	38 6		22
		½oz	24 4ea	6 1ea		42
		1oz	45 9ea	11 5ea		80
		2oz	78 0ea	19 6ea		136
	Sulphatriad (971 PSMB)†s48					
	tablets 0·5gm	100	84 0	—		10
		500	33 4ea	—		50
	Sunbeam (1199 Sunbeam)					
	electric razor cordless 711		—	—		332
	electric razor X500			—		168
	electric razors 555 multi volt		—	—		199
	standard volt		—	—		179
	Sungold (50 APL)					
	liquid		17 0	4 3		2
	powder		12 0	3 0		1
	Sunsilk (509 Gibbs)					
	shampoo's cream, lemon, beauty & tonic.	bottles	20 5	5 1½		2
	Supersoft (563 Hampshire)					
	shampoo cream	sachet	2 6	7½		
	Surgaseptic (853 Modkem)					
	germicide	2oz	13 6	3 4		
		8oz	27 6	6 8		
		½ gall	21 0ea	—		
		1 gall	37 6ea	—		
I	mouthwash tablets	36	13 6	3 4		
		80	21 0	5 3		
	ointment	1oz	13 6	3 4		
		2oz	24 0	5 10		
		4oz	44 0	10 9		
		8oz	80 0	19 6		

		1lb	144 0	—	—
	uppositories		24 0	5 10	—
	hroat pastilles		13 6	3 4	—
	tablets	36	13 6	3 4	—
		80	21 0	5 0	—
	s-Cup (S3S Granose)				
	offee substitute				
		1¾oz	34 8	—	3 6
	lar (649 ICI) TS				
	ream	15gm	99 0	—	12 4½
		30gm	14 0ea	—	21 0
	tion	20mils	10 4ea	—	15 6
	intment	15gm	99 0	—	12 4½
		30gm	14 0ea	—	21 0
	lar-C (649 ICI) TS				
	ream	15gm	9 2ea	—	13 9
	intment	15gm	9 2ea	—	13 9
	lar-N (649 ICI) TS				
	ream	15gm	8 6ea	—	12 9
	tion	20mils	10 8ea	—	16 0
	intment	15gm	8 6ea	—	12 9
	ndone (649 ICI) TS				
	ream	15gm	62 0	—	7 9
		30gm	9 4ea	—	14 0
	tion	20mils	78 0	—	9 9
	intment	15gm	62 0	—	7 9
		30gm	9 4ea	—	14 0
	S **ndone-N (649 ICI) T5**				
	eam	15gm	64 0	—	8 0
	tion	20mils	80 0	—	10 0
	intment	15gm	64 0	—	8 0
	S **kavit (1074 Roche)**				
	mpoules 1mgm/mil 6 & 50				
	S **one (853 Modkem)**				
	omade		20 0	4 11	—
	T **san (78 AS&Co) †**				
	blets	12	10 6	2 7½	1 11
		50	24 0	6 0	3 11
		100	42 0	10 6	6 11
		500	17 0ea	—	—
		1000	32 0ea	—	—
	T **rine (436 Evans)**				
	T **(596 HR)**				
	ter-shave lotion				
		9524	—	—	9 6
	roll-on	9525	—	—	9 6
	ologne	9554	—	—	10 6
	re-electric shave				
		9514	—	—	9 6
	roll-on	9515	—	—	9 6
	T **ee (1535 CM&P)**				
	T **ee (798 Margolis)**				
	mpressed powder compact				
			31 4	7 10	4 6
	refill		23 0	5 9	3 9
	stick		18 10	4 8	2 9
	T **l (501 Geigy) all packs**				
	T **o (451 F&J)**				
	T **oo (1206 5C)**				
	T **-Methionine (292 C) tablets**				
	T **r of London (1541 T of L) existing entry**				
	T **or of London (1541 T of L)**				
	th essence	2oz	—	—	23 0
		4oz	—	—	42 0
		10oz	—	—	78 6
	th oil	1oz	—	—	32 6
	rfume Chyprika, Enchantment, Braemar, gardenia, red rose lily of the valley, viburnum, butterfly orchid				
		¼oz	—	—	21 0
		½oz	—	—	35 0
		1oz	—	—	63 0
	mander Wedgwood		—	—	35 0
	Blue Jasper		—	—	63 0
	Chelsea		—	—	63 0
	t-pourri		—	—	10 6
			—	—	16 9
			—	—	27 6
	chets scented (3)		—	—	12 6
	silk		—	—	21 0
	ap toilet (3)		—	—	12 6
	cum puffer	4oz	—	—	9 6
	ilet water	2oz	—	—	18 6
		4oz	—	—	30 0
		10oz	—	—	63 0
	r men				
	bath soap (3)		—	—	18 0
		4oz	—	—	19 6
	eau de Portugal	2oz	—	—	12 6
	shaving Cologne				
		2oz	—	—	12 6
		4oz	—	—	19 6
	T. **P. (1262 UL)**				
	T. **P. (1552 UL)**				
	T **Hao (100 BI)**				
	ssager		—	—	168 0
	T. **(1262 UL)**				
	T. **. (1552 UL)**				
	tiseptic				
	miniature		9 5½	2 4½	1 3
		2oz	15 1½	3 10	2 0
		8oz	32 3	8 0	4 3
	T **ale's (1214 Teasdale)†**				
	lorodyne		16 3	4 0	2 2
			30 0	7 6	4 0
	T **en (501 Geigy)**				
	lets	1000			
	T **x (501 Geigy) existing entry**				
	T **x (501 Geigy)**				
	intment	15gm	30 0	—	3 9
		120gm	10 3ea	—	15 4½
	Tetrex (171 8LL)TS				
	syrup	2oz	6 0ea	—	9 0
		16oz	43 8ea	—	65 0
	Thames (1006 PI)				
	rubber gloves		19 6	2 0	2 6
	Thawpit (1221 Thawpit)				
	naphthalene moth balls				
			11 3	—	1 3
	Thermos (1226 Thermos)				
	flasks wide mouth	60	—	—	13 9
		62	—	—	14 11
		64	—	—	18 11
	refills	60F	—	—	5 6
		62F	—	—	6 6
		64F	—	—	8 6
	jars	620	—	—	65 0
	refills	81F	—	—	32 0
		82F	—	—	46 0
		609F	—	—	55 0
	jugs	46/2	—	—	69 11
		46/3	—	—	180 0
		48/2	—	—	77 6
		29	—	—	120 0
		29Q	—	—	145 0
		52Q	—	—	240 0
	refills	J/1F	—	—	22 0
		J/2F	—	—	26 0
		J/3F	—	—	55 0
		54QF	—	—	27 0
		29F	—	—	22 0
		29QF	—	—	26 0
		52QF	—	—	30 0
I	flask stoppers 60, 62, 64		—	—	2 6
D	jars 614, 608				
D	jugs 70, 231, 231Q				
	Thibenzole (837 M5D)				
	suspension	1¾pt.	66 3ea	—	88 3
		7pt.	232 6ea	—	310 0
	tablets	30	28 6ea	—	38 0
		300	267 0ea	—	356 0
	Throsil (292 C)†				
	Thyrophem (61 APC)				
D	tablets	50			
	Thytropar (61 APC) †s4B				
	vial 10 U5P		696 0	—	80 0
I	**Tilbury (1233 WRT)**				
	toothbrushes				
	No. 4		48 0	—	—
	badger hair		60 0	—	—
	prophylactic		54 0	—	—
	Tiny Tot (1053 Rexall)				
	cough mixture	2oz	14 3	3 6¾	2 0
	diarrhoea mixture				
		2oz	14 3	3 6¾	2 0
I	**Tip & Run (853 Modkem)**				
	corn cure		11 6	2 8	—
	Tofranil (501 Geigy)†s48				
I	ampoules	10	18 0ea	—	27 0
	Tofranil (501 Geigy)				
D	capsules with promazine	1000			
	Tolanase (1263 Upjohn)				
	tablets 100mgm				
		100	18 2ea	—	—
		500	78 4ea	—	—
	250mgm	100	39 6ea	—	—
		500	185 6ea	—	—
	Tommee Tippee (1570 BN)				
	nappy bags		134 0	33 6	19 11
	with zip		204 0	51 0	29 11
	Toni 1242 Toni)‡				
	Casual hair colour		48 10	12 2½	6 11
	Tonsillin (97 Bayer)TS				
	tablets	100	21 0ea	—	31 6
D	Trillekamin (324 Crookes)				
D	Trimetts (1262 UL)				
I	**Trimetts (1552 UL)**				
I	Trisulphonamide (147 Boots)†s48				
	tablets	100	7 0ea	—	10 6
		500	33 4ea	—	50 0
	Trois Couronnes (852 Molyneux)				
	Cologne 95cc	4652	13 6ea	3 3ea	23 6
	190cc	4653	22 1ea	5 5ea	38 6
	400cc	4654	31 6ea	7 8ea	55 0
	atomiser	4679	24 1ea	S 10ea	42 0
	Tromexan (S01 Geigy)				
D	tablets 50mgm	500			
D	300mgm	10			
	Trufood (1249 Trufood)				
I	baby cereal	8oz	14 5	—	1 6
I	nursery Hysan				
		115gm	24 0	—	2 6
	Tryptar (61 APC)				
I	vial 250,000		160 0	—	20 0
	Tuamine sulphate (413 Lilly)				
	solution 1%				
	plastic spray bottle				
		15mils	2 2ea	—	3 3
I	**Tussoids (853 Modkem)**				
			7 6	1 10	—
	Tyme for Men (1188 Steiner)				
	aftershave		96 0	24 0	14 0
	Cologne		116 7	29 2	17 0
	F.7 hair tonic		116 7	29 2	17 0
	hair cream		65 2	16 3	9 6
	soap (3)		17 0	4 3	2 6
	talcum		51 3	12 9	7 6
	Udenum (853 Modkem)				
	gastric vitamin powder				
		4oz	27 0	6 7	—
	Universol (673 J of H)				
	developer	1gall	20 8ea	—	31 0
		5gall	93 4ea	—	140 0
	Unotronic (637 Hunter)				
	flashgun		—	—	319 8
I	**Uricure (1467 AP&T)**				
	tablets	30	23 6	5 10½	3 6
		70	33 0	8 3	4 9
		120	52 0	13 0	7 6
	Vallestril (1121 Sea le)				
D	tablets	100			
	Vamoose (67 Ashe)				
	aerosol		36 3	—	3 11
	Varidase (746 Lederle)TS				
	topical 125,000 units				
			24 0ea	—	36 0
	intramuscular 25,000 units				
			9 8ea	—	14 6
	buccal tablets	12	19 2ea	—	28 9
	oral tablets	12	19 2ea	—	28 9
	Vaseline (2S6 CPL)				
	shampoo beauty bottle				
		40gm	14 0½	3 6	1 11
		70gm	18 5	4 7	2 6
		123gm	27 6	6 10½	3 9
	medicated	40gm	14 0½	3 6	1 11
		70gm	18 5	4 7	2 6
		123gm	27 6	6 10½	3 9
	V-Cil-K (413 Lilly)T5				
	Pulvules 125mgm				
		100	21 0ea	—	31 6
		500	102 6ea	—	153 9
		1000	200 0ea	—	300 0
	250mgm	100	40 6ea	—	60 9
		500	200 0ea	—	300 0
		1000	395 0ea	—	592 6
	tablets 60mgm	100	10 4ea	—	15 6
		1000	100 0ea	—	150 0
	125mgm	100	21 0ea	—	31 6
		500	102 6ea	—	153 9
		1000	200 0ea	—	300 0
	250mgm	100	40 6ea	—	60 9
		500	200 0ea	—	300 0
		1000	395 0ea	—	592 6
D	Veinotrope (292 C) tablets				
	Veno's (104 8P)				
	cough mixture		24 0	5 6½	3 1
			38 11	9 0	5 0
	Venotone (8S3 Modkem)†				
	cream	1oz	33 0	—	—
		2oz	58 0	—	—
		4oz	108 0	—	—
		1lb	22 6ea	—	—
	Victor (1333 Wigmore)				
	Acqua di Selva				
	aerosol	089	—	—	25 0
	after shave lotion				
	aerosol	049	—	—	19 6
	brilliantine solid				
		062	—	—	9 9
	soap	140	—	—	7 6
	Videnal (853 Modkem)				
	tablets	40	60 0	14 7	—
		120	144 0	35 1	—
	Vi-Magna (746 Lederle)				
	syrup	4oz	4 0ea	—	6 0
		16oz	12 0ea	—	18 0
	Vince (721 LC)				
	powder	2oz	21 0	5 3	2 9
D	Virugon (97 Bayer) tablets				
	Vitapointe (1530 Fisons)				
	hair spray		S6 0	14 0	7 11
	shampoo cream				
		sachet	6 0	1 6	10
		bottle	21 0	5 3	2 11
	liquid	sachet	6 0	1 6	10
		bottle	21 0	5 3	2 11
	Vivacious (385 DG)				
	bath essence		100 0	25 0	14 6
	perfume	purse	95 0	24 0	14 0
	perfume spray mist		130 0	32 6	19 0
	puffer spray		86 0	21 6	12 6
	skin perfume	2oz	100 0	25 0	14 6
		4oz	152 0	38 0	22 0
	Vivre (852 Molyneux)				
	perfume	1421	92 11	22 8	13 6
		1422	14 1ea	3 5ea	24 6
D	Voigtlander (673 J of H) existing entry				
I	**Voigtlander (673 J of H)**				
	cameras				
	Bessamatic				
	Color-Skopar f2.8		—	—	2348 3
	Septon f2.0		—	—	2964 4
	Bessamatic M				
	Color-Lanthar		—	—	1615 11
	Color-Skopar		—	—	1778 8
	Bessy K		—	—	299 4
	AK		—	—	691 8
	Ultramatic C5				
	Color-Skopar f2.8		—	—	2906 3
	Septon f2.0		—	—	3475 10
	Vito automatic I		—	—	674 3
	automatic R		—	—	837 0
	C		—	—	598 8
	CL Color-Lanthar f2.8		—	—	744 0
	Color-Skopar f2.8		—	—	953 3
	CLR Color-Lanthar f2.8				
			—	—	906 9
	Color Skopar f2.8		—	—	1139 3
	Vitomatic IIB		—	—	1290 5
	1118		—	—	1534 6

	Vitoret				
	Vaskar f2.8		—	—	264 6
	Color-Lanthar f2.8		—	—	313 11
	D		—	—	523 2
	D-Rapid		—	—	558 0
	F		—	—	348 9
	DR		—	—	616 2
	L		—	—	651 0
	Vitrona		—	—	1145 1
	projectors				
	Perkeo Automat-J f2.9/85mm			—	
			—	—	1020 0
	f2.8/100mm		—	—	1070 0
	f3.0/125mm		—	—	1120 0
	Automat-J150 f2.9/85mm				
			—	—	1150 0
	f2.8/100mm		—	—	1200 0
	f3.0/125mm		—	—	1250 0
	Vosene (105 BTD)				
	shampoo liquid				
		minibottle	6 2	1 6½	10
		53cc	18 7	4 8	2 6
		150cc	35 5	8 10½	4 9
	cream	sachet	5 7	1 5	9
D	Vytina (107 BH&L)				
	Wade's (1295 Wade)				
	salve	½oz	18 10	4 8	2 9
		1½oz	39 4	9 10	5 9
	Wander (1303 Wander)				
	diabetic canned fruits				
		8oz	19 2	—	2 0
I	**Wasp-eze** (1565 WMCC) †				
	Wata (980 Photopia)				
	cubeflash		—	—	39 6
	Watalux (980 Photopia)				
	flashgun Super		—	—	50 3
	Waterbury's (721 LC)				
	compound	16oz	58 8	14 8	8 6
	Wellcome (208 BW)				
	black disease antiserum (vet.)				
		50mils	31 6ea	—	42 0
	blackleg antiserum (vet.)				
		100mils	31 6ea	—	42 0
	lamb dysentery antiserum conc. (vet.)				
		50mils	29 3ea	—	39 0
	pulpy kidney antiserum (vet.)				
		100mils	30 0ea	—	40 0
	Wernets Dr. (1178 Stafford)				
	denture powder				
		49gm	28 0	—	3 6
		100gm	46 0	—	5 9
	White Magnolia (596 HR)				
	soap complexion (3)				
		6333	—	—	8 6
	bath (3)	6336	—	—	14 6
	White Mink (1188 Steiner)				
	bath cubes (6)		36 0	9 0	5 3
	soap (3)		17 0	4 3	2 6
D	moisture milk				
D	toilette water				
	White's, Dr. (761 Lilia White)				
	sanitary belt		14 9	1 6	1 9
	Wincarnis (279 Coleman)				
	wine red label		61 3	—	6 6
			108 6	—	11 9
D	Woltz (1372 CCL) existing entry				
I	**Woltz** (128 Biometica)				
	base coat		25 4	6 2	3 9
	nail enamel		25 4	6 2	3 9
	pearl		39 0	9 6	5 9
	remover lanolin		25 4	6 2	3 9
	oily		18 6	4 7	2 9
	thinner		18 6	4 7	2 9
	top coat		25 4	6 2	3 9
	Wright's (1351 WLU)				
	shaving cream lather		22 6	5 7½	3 1
D	liquor carbonis detergens	40oz			
	Yeast-Vite (104 BP)				
	tablets		18 9	4 4	2 5
			40 10	9 5	5 3
	Zactipar (1352 Wyeth) †s4B				
	tablets	100	196 0	—	21 10
	Zal (1480 Izal)				
	fly killer aerosol				
		giant	51 9	—	5 9
I	**Zanthine** (1455 Lister)				
	tablets		18 0	—	2 6

AMENDMENTS TO KEY TO SUPPLIERS

38 ASP=**Allied Swiss Pharmaceuticals, Ltd.**, 272 Henley Road, Henley Green, Coventry, Warwicks. Coventry 89188.

47 Anestan=**Anestan, Ltd.**, Telford Road, Houndmills Industrial Estate, Basingstoke, Hants. Basingstoke 5656.

76 Atkinson=**J. & E. Atkinson, Ltd.**, 17 Bessemer Road, Welwyn Garden City, Herts. Welwyn Garden 28100.

100 BI=**Beautishape International, Ltd.**, 31a James Street, London, W.1. Welbeck 3711.

241 Cavendish=**Cavendish Chemical Co. (New York) Ltd.**, Orleston Mews, Liverpool Road, London, N.7. North 3658.

265 Clairol=**Clairol, Ltd.**, 4a Brighton Road, Horsham, Sussex. Horsham 60255.

322 Cripps=**Cripps (Pharmaceuticals), Ltd.**, 14 Peter Road, Commerce Way, Lancing, Sussex. Lancing 5344.

349 Damancy=**Damancy & Co., Ltd.**, 225 Bath Road, Slough, Bucks. Slough 23971.

439 ERC=**Ever Ready Co. (Gt. Britain), Ltd.**, 1255 High Road, London, N.20. Hillside 8877.

521 Glenwood=**Glenwood Laboratories, Ltd.**, 7 Berkeley Street, London, W.1. Hyde Park 2971.

536 GMP=**Grahams Medical Products, Ltd.**, Park Road, Faringdon, Berks. Faringdon 2011.

565 Hanimex=**Hanimex (U.K.), Ltd.**, 15 Great Dover Street, London, S.E.1. Hop 8161.

589 HEB=**H.E.B. Pharmaceuticals, Ltd.**, Hampden Road, Sale, Cheshire. Pyramid 4418.

615 H&M=**Hodges & Moss, Ltd.**, Harlescott Lane, Shrewsbury. Shrewsbury 51558.

684 Kaylene=**Kaylene Chemicals Division, Fore Industries (U.K.), Ltd.**, The Adelphi, John A Street, London, W.C.2. Whitehall 6777.

696 KPM=**Kennett Price Markers, Ltd.**, Winnall V Road, Winchester, Hants.

697 KJ=**Kerby Johns & Associates, Ltd.**, 135 Ch Orchard Road, Croydon, Surrey. Croydon 4035.

702 KC=**Kimberly-Clark, Ltd.**, Larkfield, nr. M stone, Kent. Maidstone 77700.

771 LCPL=**Lofthouse Chemical Products,** 103 Lord Street, Fleetwood, Lancs. Fleetwood 36

792 M&GG=**M. & G. G. Electrical Co.**, 1 Priory Sudbury, Middlesex.

799 MP=**Marshall's Pharmaceuticals, Ltd.**, 17 rietta Street, London, W.C.2. Temple Bar 2147.

823 M&R=**McKeeson & Robbins, Ltd.**, Haine Indus Estate, Ramsgate, Kent. Thanet 52911.

939 Parkinsons=**Parkinsons, Ltd.**, Curzon St Burnley, Lancs. Burnley 21818.

994 P&M = **P & M-Warrick**, Seymour Road, Lon E.10. Leytonstone 3334.

1104 Satinex=**Satinex (Great Britain), Ltd.**, Shaw Hawarden, N. Wales. Hawarden 3021.

1156 FS=**Frank Sammeroff, Ltd.**, 120 Gorbals St Glasgow, C.5. South 1951.

1199 Sunbeam=**Sunbeam Electric, Ltd.**, Ner East Kilbride, Glasgow. East Kilbride 25267.

1203 Surex=**Surex, Ltd.**, 4 Leicester Road, Black Lancs. Blackpool 20434.

1220 CT=**Chas. F. Thackray, Ltd.**, 38 Welbeck St London, W.1. Welbeck 8152.

1233 WRT=**W. R. Tilbury & Son**, Herald St London, E.2. Bishopsgate 7881.

1282 VB=**Vines Biocrin, Ltd.**, 111 Clarence R London, E.5. Amhurst 8808.

1372 CCL=**Continental Cosmetics, Ltd.**, 1 Boun Row, London, S.E.1. Waterloo 6955.

1391 Swiffax=**Swiffax, Ltd.**, 6 Vigo Street, London, Regent 3432.

1436 D & Co=**Degenhardt & Co., Ltd.**, 20 Mort Street, London, W.1. Museum 8050.

1455 Lister=**Lister Laboratories**, 17 Boclair R Bishopbriggs, Glasgow. Bishopbriggs 1412.

1460 Dome=**Dome, Division Miles Laboratories,** Stoke Court, Stoke Poges, Slough, Bucks. Farn Common 2151.

1467 AP&T=**Acton Pill & Tablet Co., Ltd.**, Orle Mews, Liverpool Road, London, N.7. North 3658.

1468 Dew=**J. W. H. Dew & Co., Ltd.**, Milborne Sherborne, Dorset. Milborne Port 382.

1492 Baum=**M. Baum Wholesale Chemists,** Monkwearmouth, Sunderland. Sunderland 71081.

1545 Vestric=**Vestric, Ltd.**, Chapel Street, Runc Ches. Runcorn 4321.

1552 UL=**Unicliffe, Ltd.**, Unimart House, St nr. Sandwich, Kent. Sandwich 2372.

1553 Contactasol=**Contactasol, Ltd.**, 47 The Broad Tolworth, Surbiton, Surrey. Elmbridge 1575.

1554 BL=**Babytown, Ltd.**, Hoddlesden Mills, Dar Lancs. Darwen 71602.

1574 DBMP=**Down Bros. and Mayer & Phelps,** Church Path, Mitcham Surrey. Mitcham 6291.

THIS WEEK'S CHANGES

Prices are given in the sequence: Trade price per doz./purchase tax per doz./retail price (bold if maintained), thus:—17s 11d/4s 3d/2s 3d. A dash — in any column indicates that the manufacturer has provided no figure appropriate to that column.

R	**Adcortyl** (1176 Squibb)TS				
	tablets 1mgm	100	23 6ea	—	35 3
	4mgm	30	29 6ea	—	44 3
		100	94 0ea	—	141 0
		500	429 10ea	—	644 9
D	tablets 1mgm	500			
	Ambre Solaire (525 Golden)				
●	lotion bronzante		65 2	14 6	9 6
	Amplex (67 Ashe)				
●	deodorant aerosol		43 1	10 9¼	5 11
	Ayrton (78 AS&Co)				
A	thermal wool	¾oz	15 0	3 9	2 6
		1½oz	26 0	6 6	4 3
A	vapour rub	tin	10 6	2 7½	1 9
	Damaskin (657 IL)				
A	Quick Tan		24 0	6 0	3 6
A	**Dellipsoids** (853 Modkem)				
	D1 iron and yeast				
		60	15 0	3 8	—
		120	22 0	5 4	—
		dp250	5 0ea	—	—
		dp500	9 6ea	—	—
		dp1000	16 6ea	—	—
	D2 tonic †	40	16 6	4 1	—
		100	33 0	8 1	—
		dp250	8 0ea	—	—
		dp500	14 0ea	—	—
		dp1000	24 0ea	—	—
	D4 anodyne †	30	22 0	5 4	—
		100	60 0	14 8	—
		dp250	11 6ea	—	—
		dp500	21 6ea	—	—
		dp1000	42 0ea	—	—
	D5 rheumalgia	100	44 0	10 9	—
		250	10 0ea	2 5ea	—
		500	17 6ea	4 4ea	—
		1000	33 0ea	8 1ea	—
	D6 analgesic	30	16 6	4 1	—
		100	36 0	8 8	—
		dp250	7 6ea	—	—
		dp500	13 6ea	—	—
		dp1000	26 0ea	—	—
	D7 cold †	30	20 0	4 11	—
		100	48 0	11 8	—
		dp250	10 6ea	—	—
		dp500	18 0ea	—	—
		dp1000	36 0ea	—	—
	D8 hypotensive †				
		36	17 6	4 4	—
		100	42 0	10 3	—
		dp250	8 0ea	—	—
		dp500	16 6ea	—	—
		dp1000	30 0ea	—	—
	D9 aperient †	50	11 0	2 8	—
		100	18 0	4 4	—
		dp250	6 0ea	—	—
		dp500	7 0ea	—	—
		dp1000	11 0ea	—	—
	D10 rheumatic †				
		30	27 0	6 7	—
		100	60 0	14 8	—
		dp250	11 6ea	—	—
		dp500	22 0ea	—	—
		dp1000	42 0ea	—	—
	D13 stilboestrol †s4B				
		30	11 6	—	—
		100	21 0	—	
		250	5 6ea	—	
		500	8 9ea	—	
		1000	16 0ea	—	
	D14 sedative tonic †s1s4A				
		30	13 0	3 2	
		100	39 0	9 6	
		dp250	7 6ea	—	
		dp500	14 6ea	—	
		dp1000	28 0ea	—	
	D15 bronchial †	25	16 0	3 11	
		50	30 0	7 3	
		dp250	10 0ea	—	
		dp500	17 6ea	—	
		dp1000	36 0ea	—	
	D16 nerve †	50	18 0	4 5	
		100	36 0	8 8	
		dp250	7 6ea	—	
		dp500	11 6ea	—	
		dp1000	26 0ea	—	
	D17 asthma †	25	18 0	4 5	
		50	39 0	9 6	
		250	13 0ea	—	
		500	23 0ea	—	
		1000	48 0ea	—	
	D18 cardiac s1	36	15 0	3 8	
		100	36 0	8 8	
		dp250	7 0ea	—	
		dp500	13 0ea	—	
		dp1000	26 0ea	—	
	D19 climacteric †s1s4A				
		30	40 0	—	
		100	120 0	—	
		250	25 0ea	—	
		500	46 0ea	—	
		1000	90 0ea	—	
	D20 stomachic †				
		50	25 0	6 2	

A = Price advanced
R = Price reduced
● = New entry
D = Delete
C = Correction
I = Insert

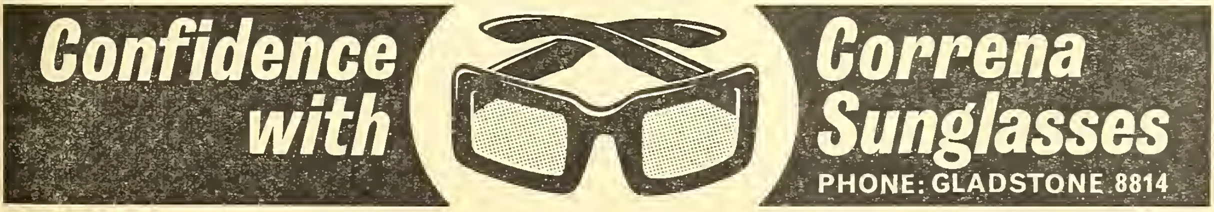
		100	44 0	10 9	—
		dp250	9 0ea	—	—
		500	16 0ea	—	—
		1000	38 0ea	—	—
	21a tri-vitamin	50	18 0	—	—
		100	27 0	—	—
		250	7 0ea	—	—
		500	13 0ea	—	—
		1000	18 0ea	—	—
	24 dextroamphetamin sulph. †s48	25	10 0	—	—
		100	27 0	—	—
		250	4 6ea	—	—
		500	9 6ea	—	—
		1000	18 0ea	—	—
	25 dextro-amphetamin comp. †s1s4A	25	13 0	—	—
		100	33 0	—	—
		250	6 0ea	—	—
		500	11 0ea	—	—
		1000	22 0ea	—	—
	28 ferrous gluconate	25	16 0	3 11	—
		100	40 0	9 10	—
		dp250	7 0ea	—	—
		dp500	13 0ea	—	—
		dp1000	27 0ea	—	—
	29 reserpine †s48	100	54 0	—	—
		250	11 0ea	—	—
		500	20 0ea	—	—
		1000	40 0ea	—	—
	30 ferrous succinate co.	25	16 0	—	—
		100	42 0	—	—
		250	7 0ea	—	—
		500	13 0ea	—	—
		1000	30 0ea	—	—
F	**aine** (31 AP)				
	istributors 1054 R&A)				
	ap toilet box of 3	A32	41 0	10 3	6 0
	ath box of 3	A33	72 0	18 0	10 6
G	**ac** (63 Arnold)				
	xiliary cream		60 0	15 0	8 9
			99 4	24 10	14 6
	ir colour restorer		60 0	15 0	8 9
			99 4	24 10	14 6
G	**smith's** (544 Grossmith)				
	ue cedar bath crystals	909	49 0	12 3	7 3
	y of the valley				
	ath crystals	809	49 0	12 3	7 3
	ubes	805	28 0	7 0	4 3
	oap	102	53 0	13 3	7 9
	alcum	807	26 6	6 7½	4 0
	ap				
	nglish moss rose	100	53 0	13 3	7 9
	orest fern	101	53 0	13 3	7 9
	andalwood	103	53 0	13 3	7 9
	ummer jasmin	104	53 0	13 3	7 9
	u de Cologne	261			
		262			
		263			
		265			
		266			
	let soap	2718			
H	**nell** (1376 Hartnell)				
	stributors 544 Grossmith)				
	eam powder compact	H107	82 6	20 7½	12 3
	fill	H108	43 0	10 9	6 6
	ep beauty cleansing cream	H104	53 0	13 3	7 9
	brow pencil	H112	26 6	6 7½	4 0
	shadow	H111	37 6	9 4½	5 6
	e powder	H106	49 0	12 3	7 3
	stick	H!09	49 0	12 3	7 3
	fill	H110	34 0	8 6	5 0
	uid beauty foundation	H100	43 0	10 9	6 6
	isture lotion	H!01	47 0	11 9	7 0
	ht beauty cream	H105	56 0	14 0	8 3
	ck beauty cleansing milk	H102	49 0	12 3	7 3
	ge cream	H113	23 6	5 10½	3 6
	freshener				

	Ice Blue (1113 5&8)				
A	Aqua Velva		34 1	8 6	4 6
			56 10	14 2½	7 6
A	**In Love** (1376 Hartnell)				
	(distributors 544 Grossmith)				
	bath crystals	HL26	74 0	18 6	10 9
	cubes	HL17	37 6	9 4½	5 6
	bubbling bath oil	HL16	71 6	17 9	10 6
	cream perfume	HL47	79 6	19 10½	11 6
	dusting powder	HL7	100 0	25 0	14 6
	eau de toilette	HL10	71 6	17 10½	10 6
	hand lotion	HL33	47 0	11 9	7 0
	perfume	HL1	53 0	13 3	7 9
		HL15	81 0	20 3	12 0
		HL5	151 0	37 9	22 0
		HL2	267 6	66 10½	40 6
		HL3	440 0	110 0	64 6
		HL4½	550 0	137 6	80 3
	spray	HL6	116 6	29 1½	17 0
	soap bath	HL8C	38 0	9 6	5 6
	toilet (3)	HL8	62 0	15 6	9 0
	spray set	HL14	85 0	21 3	12 6
	talcum	HL9	49 0	12 3	7 3
I	**Ivy** (78 A5&Co)				
	tonic tablets	50	18 0	—	2 6
	Lacto-calamine (324 Crookes)				
●	baby cream	110gm	40 0	10 0	5 10
	talc puffer	80gm	18 0	4 6	2 7½
	Lastonet (733 Lastonet)				
●	support stockings 5panflex		22 0pr	—	33 0
A	**Lectric Shave** (1113 5&B)				
		small	22 9	5 8	3 0
		large	43 7	10 11	5 9
●	**Ledercort D** (746 Lederle)T5				
	topical cream	30gm	7 6ea	—	11 3
		250gm	54 8ea	—	82 0
A	**Lemskin** (893 Nicholas)		10 1	2 5	1 5
			16 8	4 0	2 4
●	**Look** (78 A5&Co)				
	eye glass cleaner		31 0	—	3 11
	Loxene (563 Hampshire)				
A	hair cream		16 2	4 0½	2 2
			24 2	6 0½	3 3
A	shampoo	sachet	5 7	1 4¾	9
		2oz	18 7	4 8	2 6
		6oz	33 6	8 4½	4 6
	Misslyn (743 LIL)				
●	lipstick pearlised		45 0	11 3	6 9
A	**Old Cottage** (544 Grossmith)				
	after shave	200	41 6	10 4½	6 0
	bath crystals	92	49 0	12 3	7 3
	cubes	90	28 0	7 0	4 3
	dusting powder	73E	56 0	14 0	8 3
		73EX	42 6	10 7½	6 3
	brilliantine liquid	209	37 6	9 4½	5 6
	solid (jar)	77L	20 6	5 1½	3 3
	(tin)	80	17 0	4 3	2 6
	Cologne stick	91	26 6	6 6	4 0
	compressed blossoms	71S	8 9	2 2¼	1 3
	hair cream	202	28 0	7 0	4 3
	lavender	73/0	17 0	4 3	2 6
		73/1	30 0	7 6	4 6
		73/2	37 6	9 4½	5 6
		73/3	48 0	12 0	7 0
		73/5	71 6	17 10½	10 6
		73/6	99 0	24 9	14 6
	preshave	201	45 0	11 3	6 6
	shaving bowl	204	34 0	8 6	5 0
	stick	205	26 6	6 7½	4 0
	smelling salts	79	20 6	5 1½	3 0
	soap bath mens	203	26 6	6 7½	4 0
	bath box of 3	70½B	75 0	18 9	11 0
	toilet box of 3	708	41 3	10 3¾	6 0
	talcum	73F	26 6	6 7½	4 0
		73P	31 6	7 10½	4 9
D	5picy after shave	20			
D	pre shave	21			
D	talcum	22			
A	**Oxydent** (1113 5&8)				
	denture cleanser		14 6	3 7½	1 11
			26 6	6 7½	3 6
	Penicillamine hydrochloride (378 Dista)T5				
R	capsules 150mgm		214 1ea	—	321 1

D	Porton (969 Pfizer)				
I	**Porton** (218 Calmic)				
	Quixalin (1176 5quibb)				
●	suspension 120mils		8 6ea	—	12 9
	Remington (1044 RR)				
	after shave		—	—	9 6
	pre-shave		—	—	9 6
	powder stick		—	—	9 6
	steriliser		—	—	9 6
	eau de Cologne		—	—	11 6
A	**Safoin** (63 Arnold)				
	colour gloss oil		53 1	13 3	7 9
	glamour hair rinse		53 1	13 3	7 9
	hair dye		60 0	15 0	8 9
	skin and hair bleach		60 0	15 0	8 9
	white henna		53 1	13 3	7 9
A	**Shavex** (893 Nicholas)				
	tube		12 10	3 1	1 9
			20 9	5 0	2 10
	jar		20 9	5 0	2 10
A	**Skol** (1113 5&B)				
	suntan lotion		15 2	3 9½	2 0
			22 9	5 8	3 0
			36 0	9 0	4 9
	suntan oil		32 3	8 1	4 3
	gelee	tube	26 6	6 7½	3 6
	lotion spray bottle		45 6	11 4½	6 0
	Tabalgin (1320 W5P)				
R	tablets	500	26 3ea	—	39 4
D		2500			
●	**Tabu** (350 Dana)				
	dusting powder		25 9ea	6 4ea	45 0
	Vasculit (154 B)				
	(distributors 531 Geigy)				
●	drops 1%	20gm	58 0	—	7 3
D		1oz			
A	**White Fire** (544 Grossmith)				
	bath crystals	609	49 0	12 3	7 3
	cubes	605	30 0	7 6	4 6
	bouquet perfumed Cologne	603	37 6	9 4½	5 6
		613	53 0	13 3	7 9
		614	87 0	21 9	12 9
	bubble bath oil	610	37 6	9 4½	5 6
	Cologne stick	615	37 6	9 4½	5 6
	complexion soap (3)	604	45 0	11 3	6 6
	dusting powder	606	64 0	16 0	9 6
		606X	50 6	12 7½	7 6
	hand lotion	612	37 6	9 4½	5 6
	perfume	600	37 6	9 4½	5 6
		601	71 6	17 10½	10 6
		602	142 0	35 6	20 9
	cream	616	56 0	14 0	8 3
	talcum	608	39 6	9 10½	5 9
A	**Youthexa** (63 Arnold)				
	after-hair lotion		60 0	15 0	8 9
			99 4	24 10	14 6
	anti-grease scalp pack		60 0	15 0	8 9
			99 4	24 10	14 6
	astringent cream		60 0	15 0	8 9
			99 4	24 10	14 6
	black-head remover outfit		99 4	24 10	14 6
	cleansing cream		60 0	15 0	8 9
			99 4	24 10	14 6
	easy hair tint		53 1	13 3	7 9
	hair Grokair		60 0	15 0	8 9
	tinting crayon		53 1	13 3	7 9
	remover stick		39 4	9 10	5 9
			60 0	15 0	8 9
	hand balm		60 0	15 0	8 9
			99 4	24 10	14 6
	cream		60 0	15 0	8 9
			99 4	24 10	14 6
	powderstone hair eraser		99 4	24 10	14 6
	skin food		60 0	15 0	8 9
			99 4	24 10	14 6
	tonic clay pack		60 0	15 0	8 9
			99 4	24 10	14 6
	eyelash cream		53 1	13 3	7 9
	wrinkle cream		60 0	15 0	8 9
			99 4	24 10	14 6

AMENDMENTS AND ADDITIONS TO KEY TO SUPPLIERS

855 Mondart=**Mondart, Ltd.,** 2 Aintree Road, Perivale, Middlesex. Perivale 4204.



C. & D. **RETAIL AND DISPENSING PRICE LIST**

Monthly List of Changes

Cost d.	per	Item	Retail 16 oz. s. d.	4 oz. s. d.	1 oz. s. d.	1 dr. s. d.
129	500 g.	Acid. acetylsalicyl. ..	—	4 2	1 3	0 2
187	100 ml.	Aqua anisi conc., B.P.C.	—	—	8 0	1 2
48	1 gl.	Aqua destillata (pint) ..	0 9	0 2	—	—
828	500 g.	Bismuth carbonas, B.P.C.	—	—	8 1	1 2
33	1 lb.	Cataplasma kaolini ..	4 2	per	lb.	tin
129	2 l.	Emuls. paraff. liq., B.P.C.	3 8	1 0	0 3½	—
41	16 oz.	Emuls. paraff. liq. c. phenolphthal., B.P.C...	5 2	1 6	0 5½	—
264	2 l.	Ext. glycyrrhizæ liq. ..	—	2 2	0 8	0 1
84	500 ml.	Glycerinum	9 6	2 8	0 10	—
396	2 l.	Linct. codein., B.P.C. P.I. (13)	—	3 2	0 11½	0 1½
228	2 l.	Linct. scillæ opiat, B.P.C. P.I. (13)	—	1 10	0 6½	0 1
114	2 l.	Lotio calamin.	3 3	0 11	0 3½	—
87	500 g.	Magnes. trisilicas ..	—	2 10	0 10	0 1½
192	2 l.	Ol. arachis	5 5	1 7	0 5½	—
240	2 l.	Oxymel scillæ, B.P.C. ..	—	1 11	0 7	0 1
120	500 g.	Pasta mag. sulph., B.P.C.	13 7	3 10	1 2	—
87	500 g.	Potassii citras	2 10	0 10	0 1½	—
90	1 kg.	Pulv. mag. trisilicat. co. B.P.C.	5 1	1 5	0 5	—
123	2 l.	Spt. chirurgicalis, B.P.C., No. 1.	3 6	1 0	0 3½	—
114	2 l.	Syrupus	—	0 11	0 3½	—
120	500 ml.	Syr. cocillanæ co., B.P.C.'49 P.I. (10 and 13) ..	—	3 10	1 2	0 2
420	2 l.	Syr. codein. phos., B.P.C. P.I. (9)	—	3 4	1 0	0 1½
177	500 ml.	Tinct. benzoin co., B.P.C.	—	5 8	1 9	0 3
117	500 ml.	Tinct. chlorof. et morph., B.P.C., P.I. (9).. ..	—	3 9	1 2	0 2
270	500 ml.	Tinct. ipecacuanhæ ..	—	8 8	2 8	0 5
96	500 ml.	Tinct. opii camph., P.I. (9)	—	3 1	0 11	0 1½
90	500 g.	Ung. zinci et ol ricini ..	—	2 11	0 10½	0 1½
70	500 ml.	Vap. menthol. et eucalypt., B.P.C.	—	2 3	0 8	0 1

d.	per	Item	25	100
		Capsules		
258	1000	Vitamins, B.P.C... ..	1 7	4 8
		Tablets		
174	1000	Aspirin co., B.P.C. ..	1 1	2 11
333	1000	Codein. co., P.I. (9) ..	1 7	4 11
183	1000	Ferrous gluconate 300 mgm	1 3	3 7
312	1000	Paracetamol 500 mgm. ..	1 6	4 8
57	1000	Phenobarbiton 30 mgm. S.1., ℞ only	0 9½	1 9
1074	500	Quinin. bisulphat. 125 mgm. (gr. 2)	8 5	33 0
468	100	Quinin. bisulphat. 300 mgm. (gr. 5)	17 8	68 3
216	100	Quinin. sulphat. 125 mgm. (gr. 2)	8 6	31 6
333	100	Quinin. sulphat. 200 mgm. (gr. 3)	13 3	48 7

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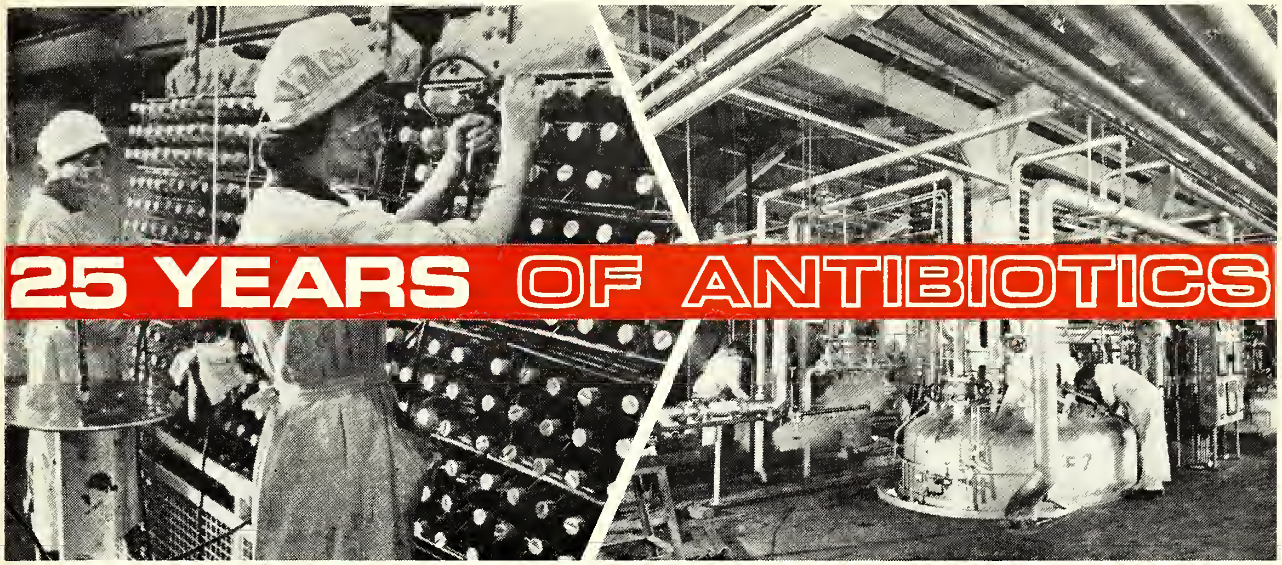


25 YEARS OF ANTIBIOTICS

1941	**First therapeutic use of penicillin**
1944	Gramicidin S Streptomycin
1945	Bacitracin
1947	Chloramphenicol Phenoxymethylpenicillin Polymyxin
1948	Cephalosporin Chlortetracycline
1949	Fumagillin Neomycin
1950	Oxytetracycline
1951	Nystatin Viomycin
1952	Carbomycin Erythromycin Puromycin
1953	Amphomycin Benzathine penicillin Framycetin Tetracycline
1954	Oleandomycin Spiramycin
1955	Amphotericin B Cycloserine Lincomycin Novobiocin Vancomycin
1957	Demethyltetracyclines Kanamycin Ristocetin
1958	Paromomycin
1959	**Commercial production of the penicillin "nucleus"** Phenethicillin
1960	Fusidic acid Methicillin
1961	Ampicillin Lymecycline Methacycline Propicillin Sulphomyxin
1962	Cloxacillin
1963	Gentamicin
1964	Cephaloridine

The dates are those of first published reports

A NEW ERA DAWNS . . .

On February 12, 1941, the first attempt was begun to save a human life with penicillin. There was not, alas, enough material to achieve that purpose but the striking improvement brought about initially in the condition of the patient launched the drug on its career as a therapeutic agent.

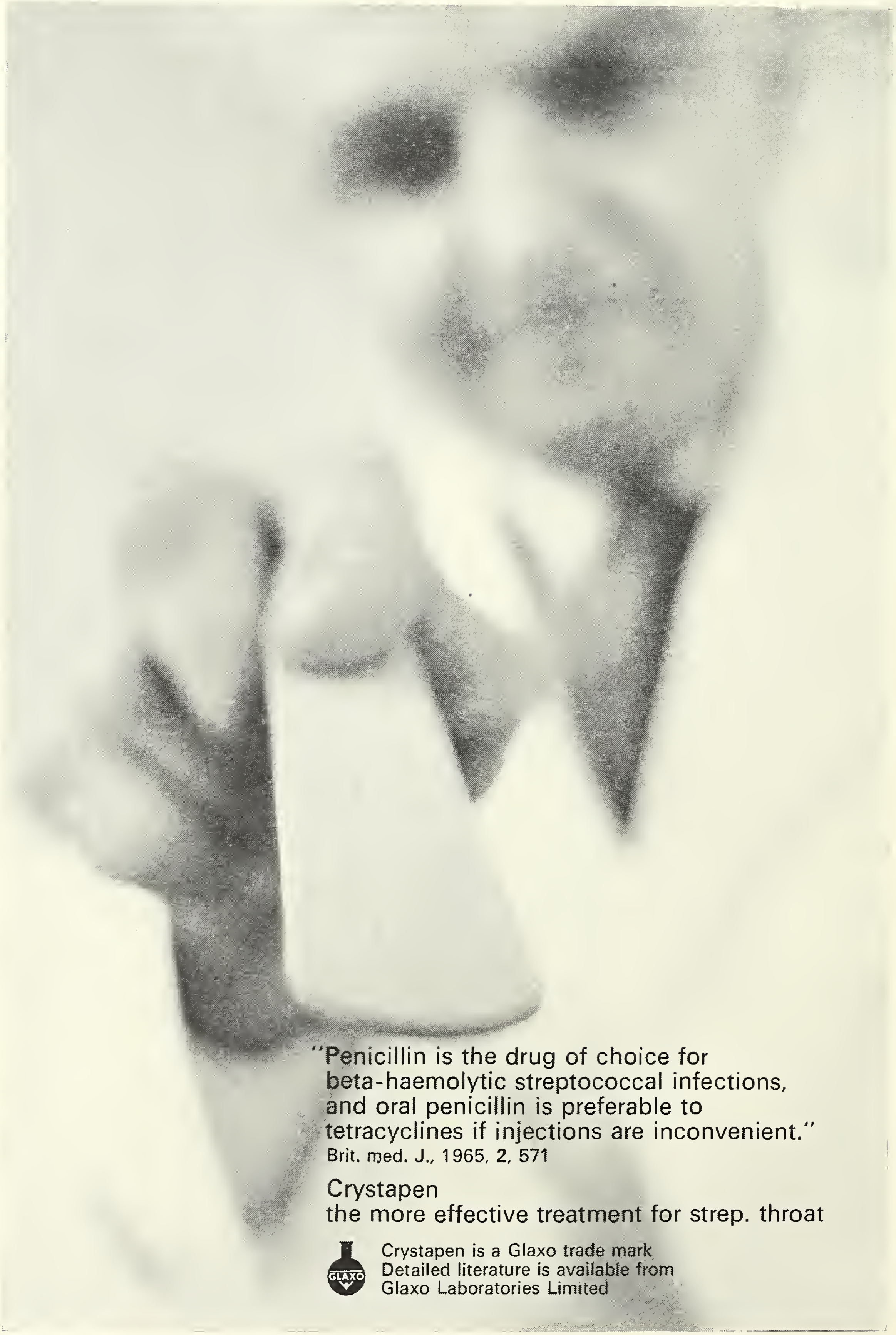
Professor Chain writes:

E. B. Chain, now professor of biochemistry at the Imperial College of Science, was chemist in the Oxford University team that investigated the activity of penicillin. He was later awarded, with two colleagues, the Nobel prize for medicine and physiology.

THE year 1965 marked the twenty-fifth anniversary of the first publication, in the *Lancet*, by my colleagues and myself, on the chemotherapeutic properties of penicillin in experimental infections in animals, and in a few months twenty-five years will have passed since the appearance of our second paper in the same periodical on the remarkable curative effects of penicillin in severe clinical infections in man.

The introduction of penicillin into clinical medicine has had revolutionary effects on the treatment of bacterial infections of a magnitude such as no one could possibly have foreseen twenty-five years ago, even in the loftiest flights of fantasy. This was due not only to the incredibly favourable properties of penicillin itself, which combined extraordinarily high antibacterial power with practically complete absence of toxicity for the animal and human body, but also to the intensive search for antibacterial substances of microbial origin which was stimulated by the discovery of the chemotherapeutic power of penicillin. This screening effort, in which many hundreds of people have participated over many years, and in which hundreds of micro-organisms were examined for antibacterial activity (it still goes on, though at a much reduced pace), has resulted in the discovery of a whole array of new powerful antibacterial substances through which the large majority of the most important infections caused by pathogenic Gram-positive and Gram-negative bacteria have been brought under control.

After the discovery of the curative power of penicillin, the main emphasis in penicillin research shifted to chemical and biochemical aspects, particularly to those having a bearing on fermentation, with a view to increasing the penicillin yields. The structure of the penicillin molecule was elucidated in 1943 as a novel fused thiazolidine-β-lactam ring system, later termed 6-aminopenicillanic acid, to the amino group of which a side-chain acid was attached. It became clear that there existed several penicillins in nature, possessing the same nucleus but different side chains. The most readily accessible of the natural penicillins, benzylpenicillin, contains phenylacetic



"Penicillin is the drug of choice for beta-haemolytic streptococcal infections, and oral penicillin is preferable to tetracyclines if injections are inconvenient."
Brit. med. J., 1965, **2**, 571

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acid as side chain, and it was found that addition of this substance to the culture medium notably increased the yield in the fermentation process. Moreover, it was discovered that the mould had the capability of accepting a number of acids as side chains, provided they were derivatives of acetic acid, and in this way a number of "biosynthetic" penicillins were prepared. One of these, phenoxymethylpenicillin, was later found to be much more stable to acids than benzyl-penicillin and has been used extensively as an oral penicillin preparation.

Ring-closure Impedes Synthesis

Attempts to synthesise the penicillin molecule were unsuccessful for ten years despite the apparent simplicity of its structure. The difficulty was to bring about the final ring closure to the β-lactam ring from the open chain penicilloic acids which *could* be synthesised, though by a laborious method. All ring closing agents known at that time produced a compound isomeric with penicillin, but devoid of biological activity, which contained the more stable five-membered azlactone ring and n which the thiazolidine ring was opened. The problem of the synthesis of penicillin was finally solved in 1953 by J. Sheehan and his colleagues at he Massachusetts Institute of Technology through the introduction of a novel type of dehydrating agent, the carbo-di-imides. Using one of these substances they succeeded in synthesising he acid-stable phenoxymethylpenicillin. This method signified a great step forward and in theory opened the way to modified penicillins with different side chain acids; in practice, however, it was very costly and laborious. A much easier way of making modified penicillins was discovered in 1956 by members of the research staff of Beecham Research Laboratories, who found that he nucleus of the penicillin molecule, -aminopenicillanic acid, accumulated n culture media of penicillin fermenations in which no side chain precursor cid had been added. Later enzymes vere discovered in a number of microrganisms which were capable of ydrolysing off the side chain acid of atural penicillins, and through this nethod 6-aminopenicillanic acid has ecome a readily available chemical, rom which numerous derivatives can e made. Among the new "semisynnetic" penicillins thus obtained, the nost important are the penicillinaseesistant, and one that has a much roader spectrum of antibacterial actiity than the natural penicillins.

Penicillinase is an enzyme discovered y the author (in collaboration with P. Abraham) in 1940 in *E. Coli*, hich destroys benzylpenicillin and her natural and biosynthetic penicilns by opening the β-lactam ring of e fused thiazolidine-β-lactam ring system with the formation of the corresponding penicilloic acids. It occurs in many species of Gram-positive and Gram-negative bacteria, and is one of the factors responsible for the insensitivity of those bacteria to the natural and biosynthetic penicillins. Many bacterial species exist which do not produce penicillinase, yet are insensitive to the penicillins. Among the Gram-positive bacteria which produce penicillinase are some highly pathogenic strains of staphylococcus. These strains are responsible for the phenomenon observed in a number of hospital wards that staphylococcal infections, which could be treated by benzylpenicillin with great ease, appeared in time to become completely refractory to benzylpenicillin treatment. The interpretation given to that phenomenon by some people (erroneously as it turned out) was that the staphylococci had "acquired" resistance through constant contact with benzylpenicillin. It could be shown, however—and the late Mary Barber played a leading rôle in the investigations—that all the benzylpenicillin-resistant staphylococci encountered in hospital wards produced penicillinase. Penicillinase production is a genetically determined characteristic, which bacteria either have or do not have, and which cannot be induced *ex novo* by penicillins in bacterial strains which are not endowed with this genetic property. It is possible to obtain highly benzylpenicillin-resistant strains in the laboratory by repeatedly subculturing sensitive strains in subinhibitory doses of benzylpenicillin, but the resistant strains thus obtained have never been shown to produce penicillinase and can therefore readily be distinguished from the naturally occurring penicillinase-producing staphylococcal strains encountered in hospital wards. The reason for the appearance of benzylpenicillin-resistant strains in these conditions is that, after elimination of the sensitive strains by benzylpenicillin, the naturally resistant ones—the penicillinase producers—become predominant and spread from patient to patient by cross infection. The answer to the penicillinase-producing staphylococci was the discovery of the penicillinase-resistant new penicillins. Since their introduction in clinical practice the problem of the benzylpenicillin-resistant staphylococcus was brought effectively under control and up to date no serious difficulties in the treatment of systemic staphylococcal infections of any kind have been reported.

Still as Effective

Apart from the staphylococcus, no complaints have been made about the appearance of other benzylpenicillin-resistant bacterial species and, in general, penicillin chemotherapy is as effective now as it was twenty-five years ago. This also applies to the gonococcus, and reports to the contrary refer to the fact that some cases of gonorrhœa do not respond to one single injection of benzylpenicillin. There is no evidence that such response was ever obtained in all cases, but it is certain no gonococcal strain of a degree of benzylpenicillin resistance has been reliably reported which would bring it outside the concentration range of benzylpenicillin obtainable in blood and tissue fluids.

A "Broad-spectrum" Penicillin

Worthy of note in a review of this kind is the semisynthetic ampicillin which has a broad antibacterial spectrum similar to the tetracyclines and chloramphenicol, but a much lower degree of toxicity. Apart from the majority of clinically encountered *E. coli* strains, most pathogenic strains of *Proteus mirabilis*, which are not affected much by the tetracyclines and chloramphenicol, are very sensitive to ampicillin. It is probable that the increased activity of ampicillin against Gram-negatives is, at least partially, due to its increased resistance to the penicillinase produced by these organisms. There exist, however, many strains of *E. coli* and other Gram-negatives which are insensitive to ampicillin though they do not produce penicillinase. It is possible, and indeed to be expected, that in the confined space of hospital wards such strains may become predominant after the use of ampicillin through a Darwinian selection process. Then another antibiotic has to be used and, if that fails, the only effective measure is to stop the use of antibiotics altogether for a time, thoroughly disinfect the area affected, and wait until the original bacterial population pattern is re-established—it is only a matter of time before this occurs.

In recent months attention has been repeatedly drawn to the danger that Gram-negative pathogens may become resistant to ampicillin and other antibiotics through transfer of the genetic material determining resistance to antibiotics, including the capability of penicillinase production, from a resistant to a sensitive organism by means of conjugation. While there is no doubt that the phenomenon of multiple resistance transfer is very real among the Gram-negatives, and can easily be demonstrated in the laboratory, it is by no means clear whether it has any clinical significance. Much more bacteriological field work is required before any valid conclusions as to its importance under field conditions may be drawn.

The main problem encountered at present in penicillin therapy is the phenomenon of allergy to the penicillins, due to the high degree of reactivity of the penicillin molecule with proteins. However, the mechanism of penicillin allergy is at present the object of intensive research and the reactions involved begin to be better understood. The hope is justified that as a result of these studies the phenomenon of penicillin allergy will, at least partially, be brought under control.

While the discovery of penicillin by Fleming and the discovery of its chemotherapeutic properties by our group at Oxford were made in academic laboratories, it is well to remember that research workers in industrial laboratories played a predominant part in all subsequent phases of the penicillin investigations, and also in the screening effort for new antibiotics. This applies to the development of production techniques and the biochemical studies through which the penicillin yields were increased from the five units or so per mil which Fleming's mould produced in our hands, to the yield of 15,000 units per mil now routinely obtained in industrial fermentations, and through which the use of penicillin as a drug (and a cheap one at that) in clinical practice became possible. It applies to the studies of its chemical structure, the discovery of biosynthetic penicillins, and in recent years, the discovery of the penicillinase-resistant semisynthetic penicillins and the broad-spectrum penicillin ampicillin. The majority of antibiotics at present in clinical use were discovered in industrial research laboratories.

It is gratifying to the reviewer that, after twenty-five years of intensive work, penicillin research has not lost its impetus, but is still actively and profitably pursued in many academic and industrial laboratories.

THE ORGANISM FIGHTS BACK

Penicillin's Mode of Action

Why it has approached most nearly Ehrlich's ideal of a "major sterilising therapy"

W. B. HUGO, B.Pharm., Ph.D., F.P.S.
(Reader in pharmaceutics, University of Nottingham)

CHEMOTHERAPY is today a well established procedure and there is little doubt that the enthusiasm and insight of Paul Ehrlich (1854-1915) laid its foundations. At the time Ehrlich was working, a great synthetic dye industry was being developed in Germany and some of its products were being used by pathologists to stain and delineate tissue sections. Most students of biology today know that it is possible, with careful choice of dyestuffs and conditions, selectively to stain the differentiate tissues that comprise the organs of animals and of plants. In fact the well established staining procedure evolved by Christian Gram was designed to demonstrate the bacteria that might be present in living tissue.

Selective Staining

Ehrlich was fascinated by selective staining and was led to wonder if the phenomenon could be usefully employed in medicine. Could he find a chemical substance that would specifically kill an invading organism while leaving the host or patient unscathed? In 1904 Ehrlich and Shiga[1], working with a dyestuff called trypan red, succeeded in curing trypanosomiasis in the mouse, with little apparent harm to the host. Soon other workers were to discover chemicals for the treatment of infection. The work of Ehrlich and Hata[2], seeking a cure for syphilis, resulted in the synthesis of the organo-arsenic compound Salvarsan after more than 600 chemicals had been prepared and tested.

Not only did Ehrlich have an ideal in curing disease by chemicals; he also had an ideal for a chemotherapeutic agent to which he gave (or would have given, had he discovered it) the general title of *therapia magna sterilisans.* That ideal substance would be non-toxic to the host, rapidly and fatally toxic to the parasite, whether trypanosome, spirochæte, bacterium, or other parasite, and, in addition, be effective at a single dose.

Although the first great success in chemotherapy was to be that achieved by the sulphonamide drugs, it is probably true that no drug has approached the ideal of the *therapia magna sterilisans* so well as has penicillin. The purpose of the present article is to inquire why that should be so.

To understand how penicillin kills bacteria, and why it is without harmful effect upon men and animals (that is if the cases of malaise or death due to allergic reactions are excluded) something of the anatomy and, even more important, the chemical composition of the bacterial cell must be understood. At this stage, however, it would be fairer, and a just tribute to the skill of early bacteriologists, to recount two significant observations which, in fact, clearly demonstrated how penicillin might act. As early as 1940, which is the year in which interest in penicillin was first revived, Gardner[3] described how low concentrations of penicillin caused morphological changes in bacteria and how bacterial growth and increase in cell size could occur though cell division was prevented. Six years later Duguid[4] on the basis of his microscopical examination of bacteria treated with penicillin, stated that "the morphological changes produced by low penicillin concentrations, in particular the failure of proper cell division and the ready occurrence of swellings and protoplasmic protrusions, suggest that penicillin in these concentrations interferes specifically with the formation of the outer supporting cell wall, while otherwise allowing growth to proceed, until the organism finally burst its defective envelope and lysed." Having recorded those early and important observations we may now see how they were to be amply vindicated as research continued.

In the simplest analysis the bacterial cell consists of a cell wall within which lies a cytoplasmic membrane. This in turn contains the cytoplasm (*fig.* 1). The internal osmotic pressure of the cytoplasm is quite high. In Gram-positive bacteria, such as *Staphylococcus aureus,* it may range from 25 to 30 atmospheres; for Gram-negative organisms, for example *S. typhi* and *E. coli,* the pressures are of the order of 4 to 8 atmospheres. When it is recalled that, if a car tyre is inflated to a pressure of 28 lb. per sq. in., that is only equivalent to 2 atmospheres, some idea of the pressure within the bacterial cell may be gained. It can easily be imagined, therefore, that the cell wall must be a strong structure.

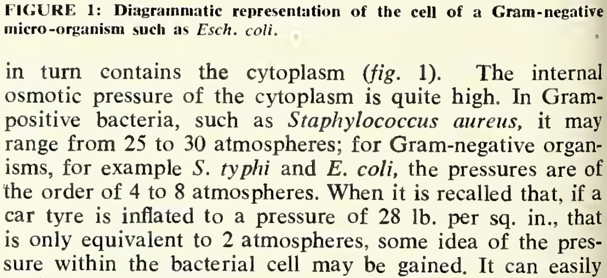

FIGURE 1: Diagrammatic representation of the cell of a Gram-negative micro-organism such as *Esch. coli*.

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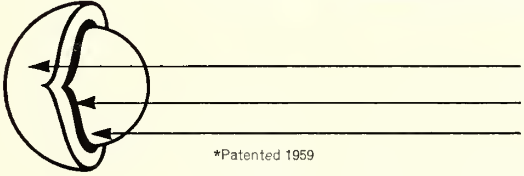

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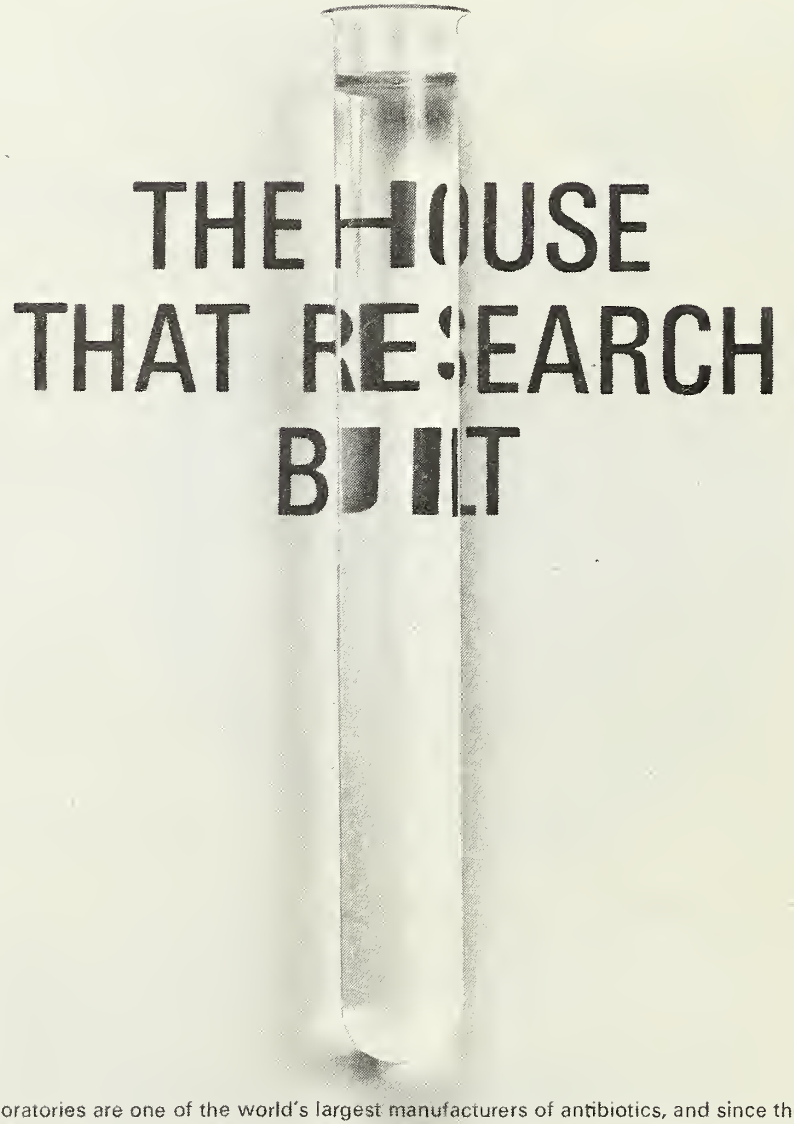

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of ruptured bacterial cells and electron microscopy of thin sections of bacteria—all contributed to knowledge of the fine structure of the bacterial cell. In both the Gram-positive and Gram-negative species a complex net-like structure of high rigidity was found to exist as part of the cell wall. Chemically that structure consisted of a polymer of N-acetyl 3-O-α-carboxyethylhexosamine (which bears the trivial name N-acetyl muramic acid) linked to a peptide. The molecule is in turn linked to N-acetylglucosamine, and the whole unit is polymerised to exist as a single macromolecule with a molecular weight of the order of 5,000 million (*fig.* 2). That rigid net, or murein sacculus as it has been called, is the structure with which penicillin specifically interferes. Gram-negative bacteria, in addition to possessing that rigid structure, contain a lipoprotein and a lipopolysaccharide, and that fact will be referred to later, when the resistance to penicillin comes to be discussed.

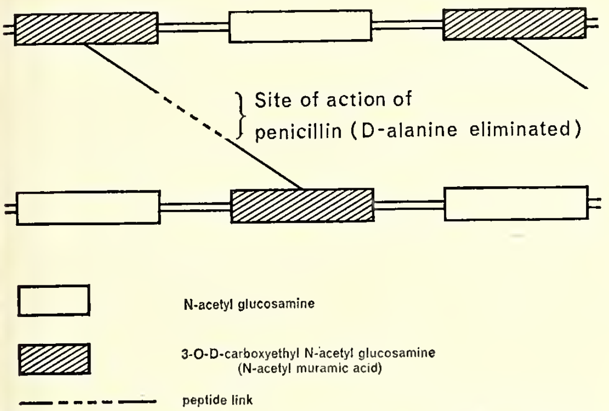
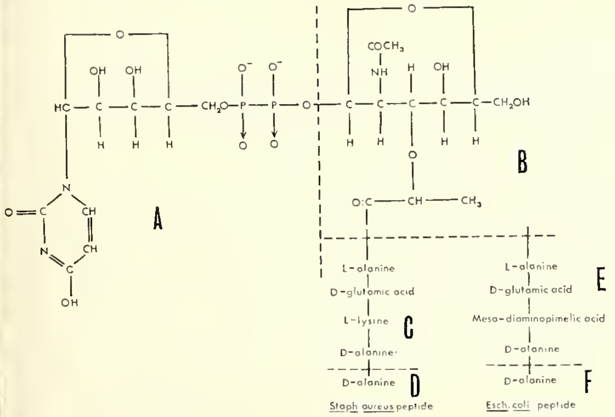

Site of action of penicillin (D-alanine eliminated)
N-acetyl glucosamine
3-O-D-carboxyethyl N-acetyl glucosamine (N-acetyl muramic acid)
peptide link

FIGURE 2: Diagram to show the constitution of the structure of the rigid (mucopeptide) component of bacterial cell walls.

Returning to the historical sequence it is necessary next to discuss studies that approach the problem from an entirely different angle from that based upon microscopical examination. In 1952 Park[5], working in the United States, reported that there accumulated in culture media in which penicillin-treated staphylococci had been growing a uridine 5′-pyrophosphate derivative of the muramic acid peptide mentioned above (*fig.* 3). At that time, however, the implication that the compound was part of the cell wall had not been established. During the next five years chemical analysis of cell walls enabled Park and Strominger[6] to realise the relationship between the uridine derivative accumulating upon penicillin treatment and the chemical structure present in the bacterial cell wall. Their findings clearly led to the hypothesis of a biochemical basis for penicillin action, namely that it impaired the synthesis of the structure. Duguid's initial observation was amply confirmed.



A	URIDINE-5′-PYROPHOSPHATE.
A+B+C+D	PARK NUCLEOTIDE *Staph. aureus.*
A+B+E+F	PARK NUCLEOTIDE *Esch. coli.*
B	ACETYL MURAMIC ACID.
B+C	ACETYL MURAMIC ACID PEPTIDE *Staph. aureus.*
B+E	ACETYL MURAMIC ACID PEPTIDE *Esch. coli.*

FIGURE 3: Park nucleotide.

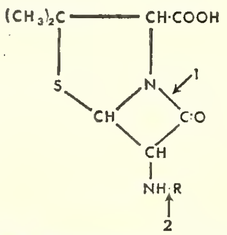
One interesting experiment may be carried out in any laboratory possessing a microscope and bacterial culture media. Lederberg, in 1956[7], observed that, if penicillin were allowed to act on a growing bacterial culture in a medium whose osmotic pressure had been increased by the addition of a suitable solute such as sucrose, it was possible to prevent the osmotic explosion or lysis that normally resulted when the rigid cell network was weakened by penicillin. Thus if rod-shaped organisms such as *E. coli*, typically about 4μ long, were so treated, the cells became converted to globular forms sometimes as large as 7μ in diameter. If the culture medium were diluted to reduce its effective osmotic pressure, then those round bodies, subsequently to be called spheroplasts, burst or lysed.

All the evidence now suggests that the penicillins prevent the biosynthesis of the rigid component of the cell wall. The muramic acid peptide wall precursor is transported to the site of synthesis as a uridine nucleotide, as in other patterns of carbohydrate biosynthesis; hence the accumulation of that compound in growing cultures treated with penicillin. In July 1965, Wise and Park[8] suggested that penicillin actually prevents the cross linking reaction (transpeptidation) between amino acids in the peptide chain of muramic acid peptide—a reaction necessary for the synthesis of the net-like macromolecule, and that, in the process, the final D-alanine in the pentapeptide was eliminated. As penicillin only affects cell-wall biosynthesis, it may be understood why only growing or dividing cells are destroyed. The substance is not toxic to non-growing cultures.

It may now perhaps also be explained why penicillin is uniquely selective in its action. The cell-wall structure of penicillin-susceptible organisms (bacteria, rickettsiæ and larger viruses) is unique to this class of living organism. There is no such structure or tissue system in man or animals and thus nothing for penicillin to act upon and damage. That, of course, is the ideal property for a chemotherapeutic agent.

Resistance to Penicillin

So far an ideal picture has emerged of penicillin as an agent in combating certain bacterial infections. Unfortunately long experience has shown that, in nature, clear-cut properties or behavioural patterns are seldom encountered in living organisms, and it is equally true to say that not all bacteria succumb to penicillin. Some actively resist its action. Many bacteria produce an enzyme called penicillin aminohydrolase (penicillinase) which is able to open the four-membered ring of the penicillin molecule producing an inactive compound (*fig.* 4). Not only is that enzyme responsible for the failure of penicillin to effect cures; it is also responsible for the destruction of whole batches of penicillin during manufacture. The research worker's fight against the former situation is one of the most fascinating exercises in experimental chemotherapy.

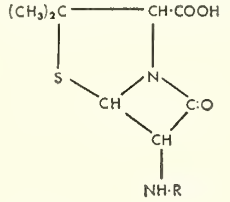


1. Penicillin aminohydrolase (" penicillinase ").
2. Penicillin acylase.

FIGURE 4: Site of action of the " penicillases."

The question was, in brief, whether it would be possible to produce a penicillin which, while retaining its unique antibacterial properties, would resist destruction by penicillinase. A group of workers at the Beecham Research Laboratories embarked upon a research programme with that end in view. By treating 6-aminopenicillanic acid (*Fig.* 5a) (which is formed when the enzyme penicillin acylase acts on penicillin (*Fig.* 4)) with a variety of reagents, they produced a series of penicillins with side-chains differing from that of benzylpenicillin (*fig.* 5b). Among them 6-(2:6-dimethoxybenzamido) penicillin, (methicillin *Fig.* 5c) and 6-(5-methyl-3-orthochlorophenylisoxazole-4-carboxamido) penicillin (cloxacillin *Fig.* 5d) were penicillinase-resistant. Cloxacillin also possessed the merit of acid resistance, and was thus active by mouth, being undestroyed by the acid conditions in the stomach.

STRUCTURES OF THE PENICILLINS CONSIDERED IN THIS ARTICLE



Penicillin nucleus

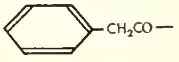
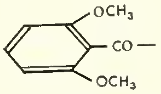
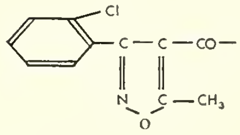
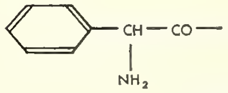
	R	COMPOUND
(a)	H——	6-Aminopenicillanic acid
(b)		Benzylpenicillin
(c)		Methicillin
(d)		Cloxacillin
(e)		Ampicillin

FIGURE 5.

The most logical explanation of penicillinase (aminohydrolase) resistance is that the new side-chains of those penicillins prevent the enzyme from coming into close contact with the penicillin. Thus the criterion for enzyme catalysis—the formation of a close attachment of enzyme with the compound it is to attack (the substrate)—was prevented. At the same time the ability to prevent cell-wall synthesis in growing cultures was not lost, though those compounds are less active than benzylpenicillin.

Possible Rôle of Cell Lipid

Despite the fact that both Gram-positive and Gram-negative bacteria share a rigid component of the cell wall, whose structure differs generally in the nature of the peptide moiety, Gram-negative bacteria as a whole are far less susceptible to penicillins (except for ampicillin) (*fig.* 5e) than are the Gram-positive organisms. An interesting factor that has recently been reported upon by Hugo and Stretton[9] is that lipid in the bacterial cell wall appears to decrease the susceptibility of Gram-positive bacteria to penicillin. In brief, those workers found that if staphylococci, *Bacillus subtilis,* and *Streptococcus fæcalis* were grown so that the lipid content of their cells was increased (easily achieved by including glycerol in the culture media or conversely by treating with a lipid-destroying enzyme such that their lipid content was decreased) then of the four penicillins studied the pattern, without exception, showed increased susceptibility when lipid was removed from the wall, and decreased susceptibility when it was allowed to build up in the wall. Although that work has only recently been published, it may throw a light on the reason why Gram-negative bacteria are less susceptible than Gram-positive, as in their own right they contain a large amount (up to 25 per cent.) of lipid in the form of lipoprotein and lipopolysaccharide in their wall.

Inheritable Resistance

More recently the evolvement of inheritable resistance in drug resistance in general and penicillin resistance in particular has been examined, and it is necessary, in order to understand the work, to say a word or two about bacterial reproduction. Bacteria differ markedly from other organisms in that they divide by binary fission, and in that reproductive act no exchange of genetic material can in general occur. However, in certain circumstances genetic exchange amongst bacteria can and does occur, and three patterns have been recognised, called respectively conjugation, transformation and transduction. An elementary treatment is given by Hugo[10]. The phenomenon of transferable drug resistance has been recently reported upon by Anderson[11], who described what are called "transferable drug-resistance factors" (R factors) in the enterobacteriaceæ. Those factors are responsible for the transfer of resistance from resistant to non-resistant strains, and that mechanism, too, must be taken into account when considering reasons for the emergence of resistant strains and techniques for its combatance.

This article has by its nature had to be brief, and the author is aware that over-simplification has occurred. Any reader who wishes for more knowledge will find a host of reviews, research papers, monographs and textbooks on this one facet of medicine and a selection of further reading is given in references 12-17.

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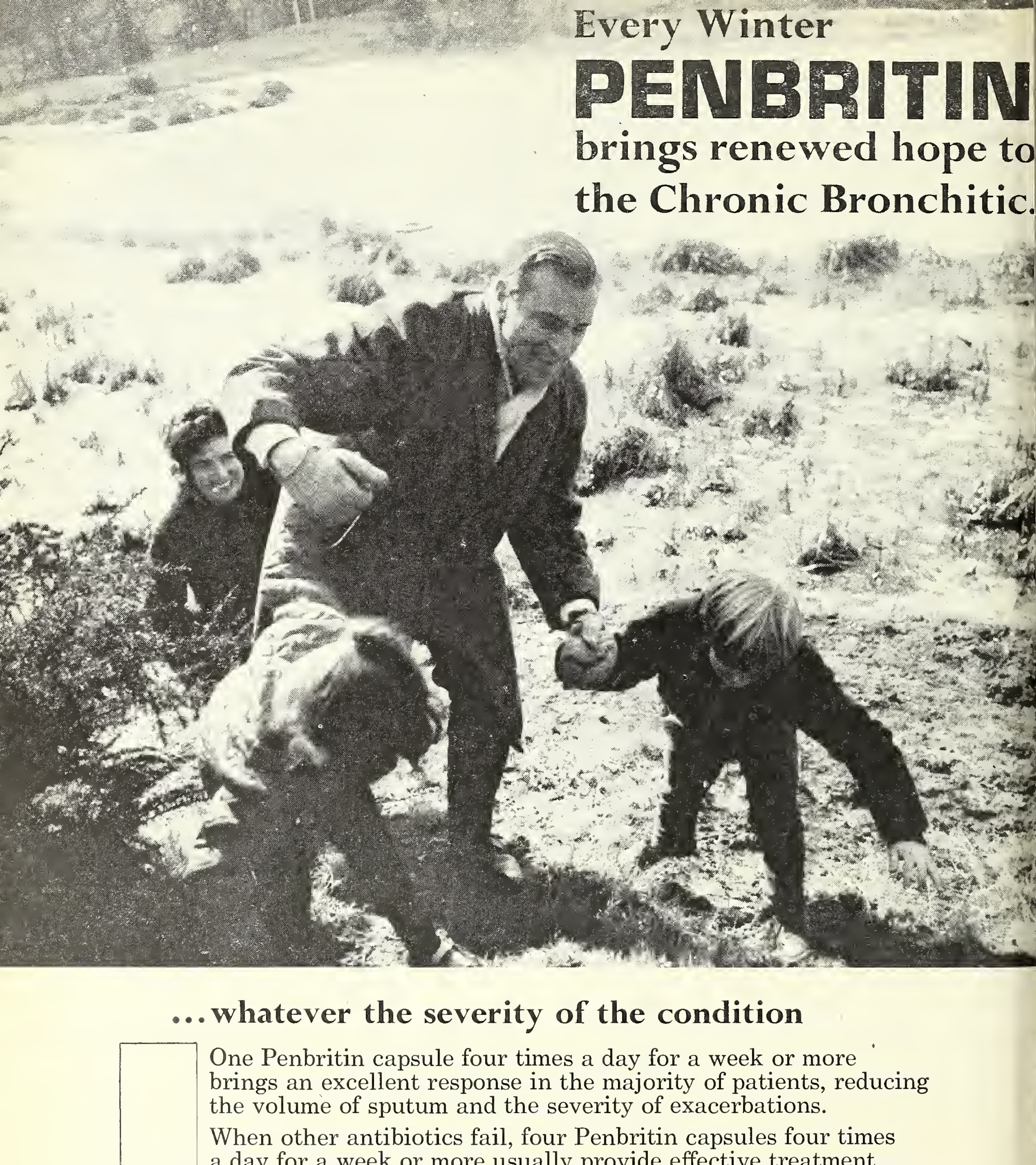

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E. T. KNUDSEN, M.B., B.S., M.C.Path.
(Medical director, Beecham Research Laboratories)

ALTHOUGH other antibiotics had been discovered many years earlier, and some had even been used locally for therapeutic purposes, the starting point of modern chemotherapy with antibiotics was the discovery of penicillin by Fleming in 1928.[1] The importance of that event was made fully apparent, more than a decade later, by the outstanding investigations of workers at the Sir William Dunn School of Pathology, Oxford. There the antibiotic was extracted in concentrated and stable form from cultures of the *Penicillium* mould, and the first proof of its systemic action was obtained in 1940.[2]

The introduction of penicillin has been followed by the discovery of many other natural antibacterial substances, a number of which have gained a place in therapeutics. Nevertheless the combination of high antibacterial activity with negligible toxicity, which is characteristic of penicillin, has not been surpassed. Indeed, the ratio of therapeutic to toxic dose is enormously greater for penicillin than for any other antimicrobial agent save the chemically-related cephalosporins. Many of the alternative antibiotics also lack the bactericidal action of penicillin, which can be of considerable importance in certain clinical situations. In addition to the above factors, considerable advances have taken place during the past eight years within the penicillin field itself. The introduction of semi-synthetic compounds has greatly extended the scope of penicillin therapy, and that momentous achievement will be discussed in more detail.

The Newer Penicillins

Because of the unique attributes of the penicillin family, research workers had long desired to produce a series of derivatives with modified characteristics, in order to overcome the disadvantages of the existing penicillins. Benzylpenicillin (penicillin G) and phenoxymethylpenicillin (penicillin V), though extremely effective against most Gram-positive organisms, have little activity against the majority of Gram-negative bacteria. Moreover penicillin G is unstable to gastric acid, which precludes reliable results after oral administration. A therapeutic problem of considerable gravity was also raised by the increasing prevalence of penicillin-resistant staphylococci, which produce a penicillin-destroying enzyme (penicillinase). This occurred particularly in hospitals, owing to the success of penicillin in eradicating sensitive staphylococci, which were originally in a majority.

The structural feature common to all penicillins is a fused β-lactam/thiazolidine ring system. The compound bearing a carboxyl group at carbon 3 and an amino group at carbon 6. 6-aminopenicillanic acid (6-APA), has been termed the penicillin "nucleus" (*fig. 1*). Penicillins are formed when one of the hydrogen atoms of the amino group is replaced by an acyl group.

The yield of a particular penicillin by fermentation may be increased by providing the mould with the appropriate side-chain material, and that principle is utilised in the manufacture of penicillins G and V. Unfortunately, however, the mould is only able to incorporate side-chains derived from mono-substituted acetic acids, and that greatly limits the number of therapeutically useful penicillins that can be produced, using biological methods alone. A great deal of research was also carried out over a number of years in the hope of obtaining penicillins by total chemical synthesis. Though the total synthesis was achieved by American workers in 1957,[3] the yield was much too low for the synthetic route to have any industrial application as a means of producing modified penicillins.

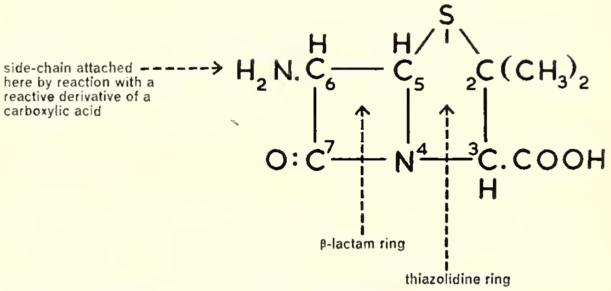
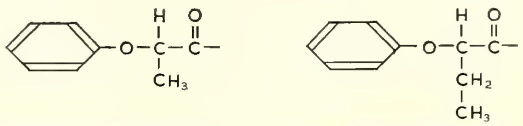

side-chain attached here by reaction with a reactive derivative of a carboxylic acid
β-lactam ring
thiazolidine ring

FIGURE 1: Structure of the penicillin nucleus, 6-aminopenicillanic acid (6-APA).

A solution to the problem was found in 1957, when the penicillin nucleus was isolated in a pure form by workers at the Beecham Research Laboratories.[4] Methods have now been developed for producing the substance, either by mould fermentation in the absence of added side-chain precursor, or by employing enzymes to remove the side-chain from readily obtainable penicillins. Its availability as a commercial intermediate means that an almost unlimited number of new penicillin compounds may be prepared, using standard chemical techniques. Such compounds are rightly termed "semi-synthetic," rather than synthetic, since the nucleus itself is of biological origin.

The semi-synthetic penicillins so far introduced into medicine all show the lack of toxicity and bactericidal mode of action typical of the penicillin family. Like the older penicillins, the compounds possess the capacity to cause reactions in hypersensitive individuals, so that they are contraindicated in patients with a penicillin allergy. A detailed discussion of the semi-synthetic penicillins is outside the scope of the present article, and for it the reader is referred elsewhere[5, 9]. The compounds fall into three main groups, each of which extends the properties of the natural penicillins. Their essential characteristics are summarised below.

PHENETHICILLIN and PROPICILLIN.—Potassium α-phenoxyethylpenicillin (phenethicillin, Broxil) and potassium α-phenoxypropylpenicillin (propicillin, Brocillin, Ultrapen) are acid-stable, oral compounds of the penicillin V type. Chemically they are analogues of penicillin V, with substitution on the α-carbon atom of the side-chain (*fig. 2*).

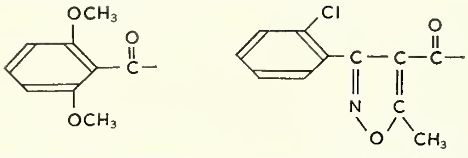


Side-chain of phenethicillin. **Side-chain of propicillin.**

FIGURE 2.

Extensive clinical usage has shown those two penicillins to be extremely effective in a range of Gram-positive infections, including tonsillitis, laryngitis, pharyngitis, sinusitis, acute bronchitis, lobar and broncho-pneumonia, boils, carbuncles, wound and skin infections, abscesses, cellulitis, otitis media, scarlet fever, erysipelas and puerperal fever. Their main advantage over penicillin V is a superior absorption into the bloodstream after oral administration. The peak serum concentrations of phenethicillin are at least double,[6] and those of propicillin at least treble,[7] the concentrations given by equivalent doses of penicillin V. The phenethicillin and propicillin levels are actually higher and more prolonged than those following intramuscular injections of corresponding amounts of penicillin G.

METHICILLIN and CLOXACILLIN.—Sodium 2,6-dimethoxyphenylpenicillin (methicillin, Celbenin) was the first commercially available penicillin that was stable and active in the presence of staphylococcal penicillinase. Its penicillinase stability is undoubtedly due to steric factors. The compound is bactericidal to all types of pathogenic staphylococci, irrespective of their resistance to penicillin G or to other antibiotics.[5] Unfortunately it is unstable in acid media, so that it must be administered by injection. Subsequent investigation of the 3,5-disubstituted 4-isoxazolyl penicillins revealed that this type of side-chain provided stability to both acid and penicillinase.[9] Sodium 3-o-chlorophenyl-5-methyl-4-isoxazolylpenicillin (cloxacillin, Orbenin) was selected as the compound of choice. It is more active than methicillin against staphylococci, and may be administered orally as well as by injection. The side-chains of both compounds are shown in *fig. 3.*

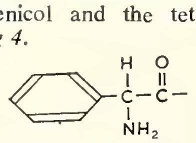


Side-chain of methicillin. **Side-chain of cloxacillin.**

FIGURE 3.

The availability of effective therapy against the resistant staphylococcus has transformed the situation, particularly in hospitals. Methicillin and cloxacillin have been literally life-saving in many serious cases, such as those of septicæmia, endocarditis, osteomyelitis, and pneumonia. They have also been widely and successfully employed in skin and wound infections, abscesses, and infected burns. Both compounds are active against α- and β-hæmolytic streptococci and pneumococci, as well as against staphylococci.

AMPICILLIN.—The presence of a free amino group in the side-chain was found in some instances to be associated with an increased activity against Gram-negative organisms. Those penicillins in which the amino group occupies the α position also have a high degree of acid stability, and the best of them was chosen for therapeutic use.[9] That compound is α-aminobenzylpenicillin (ampicillin, Penbritin), which has a breadth of antibacterial spectrum similar to that of chloramphenicol and the tetracyclines. Its side-chain is shown in *fig 4.*



Side-chain of ampicillin.

FIGURE 4.

Ampicillin is used as the free acid for oral administration, and as the sodium salt for injection. It appears in high concentrations in the urine and the bile, as well as in the bloodstream and tissues. Ampicillin has been found to be of particular value for infections of the respiratory tract (especially chronic bronchitis), urinary tract, and gastro-intestinal tract, because of its good activity against the most common infecting organisms. Similarly ampicillin is an ideal drug for subacute enterococcal endocarditis and biliary tract infections. It may be used as an alternative to chloramphenicol in typhoid fever, and is undoubtedly the drug of choice for typhoid carriers. Oral ampicillin is also highly effective in gonorrhœa, and is a suitable alternative to the standard, injectable penicillin G preparations, particularly where those fail. Ampicillin is not active against the penicillinase-producing staphylococcus, but may be combined with cloxacillin if coverage is required to include that organism. Such a combination (Ampiclox) has been made available for the prophylaxis or treatment of infection in premature babies and neonates.

Conclusion

The introduction of benzylpenicillin, the first antibiotic suitable for systemic use in man, was an event of great importance in the history of medicine. Being in many ways an ideal therapeutic substance, it has maintained its position of pre-eminence, despite the advent of a number of other useful agents. The natural penicillins, however, have several important limitations. Fortunately these limitations have largely been overcome by the development of a range of semi-synthetic penicillins, each having fairly specific applications. The penicillins thus remain major drugs of choice for infections due to susceptible organisms.

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Other Antibiotics Emerge

A survey of their medical aspects

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IN man's struggle against bacteria, the antibiotics derived from moulds such as penicillia and streptomyces have provided effective treatments for many of man's oldest enemies. Recent advances in penicillin derivatives have reduced the vital rôle of antibiotics from other sources, particularly since toxicity with the penicillins is much less than with most other antibiotics. Those with therapeutic applications still of importance are outlined below.

Systemic Antibiotics

THE TETRACYCLINES.—The group of tetracyclines provided the first contribution to oral broad-spectrum antibiotic therapy. The earlier compounds have a fairly low solubility, but achieve adequate therapeutic blood levels when given in six-hourly doses. Although antibiotics in the group are usually given orally, both intramuscular and intravenous preparations are available. In therapeutic doses their action is bacteriostatic rather than bactericidal, and resistance tends to develop fairly rapidly. All are partially protein-bound in the blood, and partly excreted via the biliary tract.

The antibacterial spectrum of the various members of the group is similar qualitatively, though small variations exist in quantitative activity against particular organisms.

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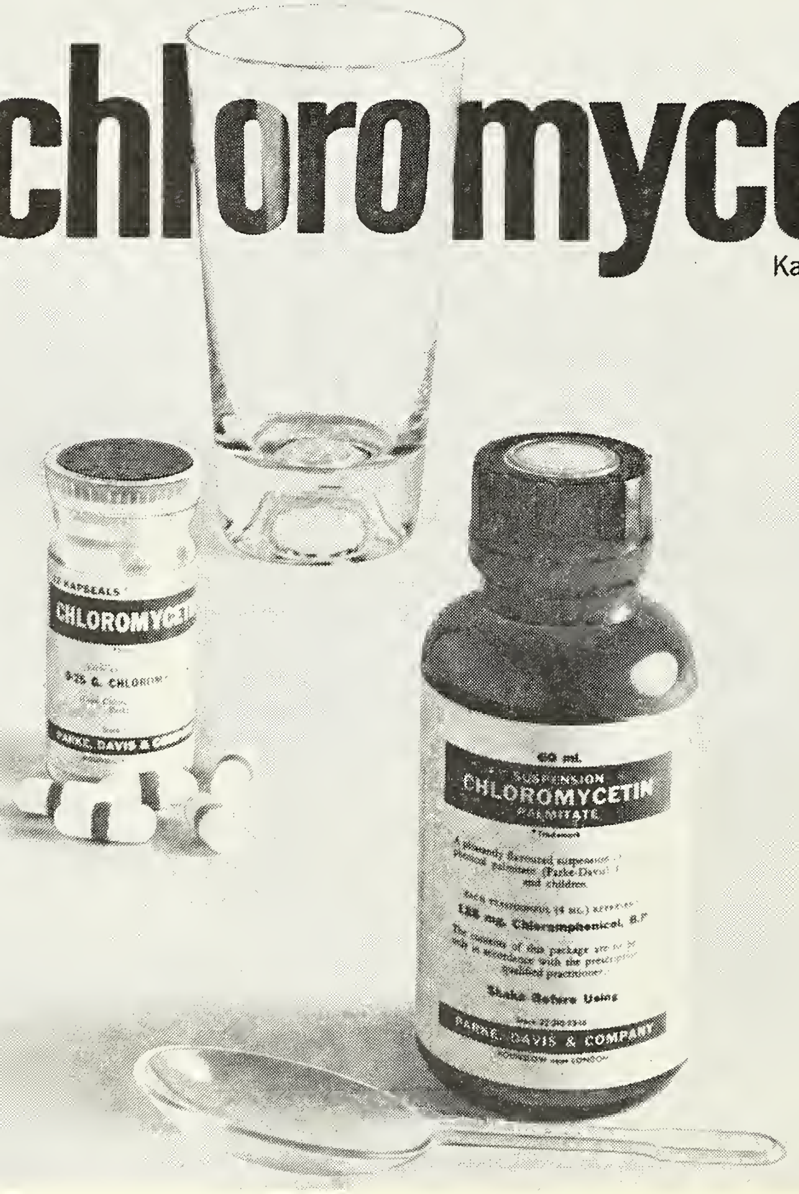

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Their activity against a wide range of Gram-positive and Gram-negative bacteria is extended also to the rickettsiæ and the larger viruses. Since all the bacterial and rickettsial causes of pneumonia are potentially susceptible, they have a wide application in respiratory-tract infections, particularly the bronchopneumonias, exacerbations of chronic bronchitis, and secondary respiratory infections following the exanthemata. Urinary-tract infections and the enteric fevers are not well controlled, but bacterial peritonitis responds well. The tetracyclines still provide the drug of choice in such specific conditions as brucellosis and trachoma. Although penicillin derivatives have replaced much of their use in coccal infections other than mixed infections of the respiratory tract, they still have a place in penicillin-sensitive patients. They play a minor rôle in tuberculosis resistant to streptomycin, isoniazid and para-aminosalicylic acid, but large doses are required.

Tetracycline itself offers little advantage over the other members of the group except a higher *in vitro* activity against *B. proteus*. All tetracyclines, however, are clinically disappointing in *proteus* infections. Oxytetracycline, produced by *Streptomyces rimosus,* shows less protein-binding than others of the group, and may be slightly more active against *Pseudomonas pyocyanea.* Chlortetracycline, produced by *Streptomyces aureofaciens,* was the first to be clinically applied, and has a higher activity against Gram-positive cocci than the other two.

More recent tetracyclines include demethylchlortetracycline which, produced by a mutant strain of *Streptomyces aureofaciens,* is much more stable than chlortetracycline, is cleared more slowly, and has a higher weight-for-weight activity. Dosage is therefore smaller, but side effects are no less frequent. Methacycline is similar, but is even more soluble and shows higher blood levels. Lymecycline is also very soluble and rapidly absorbed and it may be better tolerated than previous tetracyclines. All show a similar antibacterial spectrum to the earlier ones.

Side effects from tetracyclines are not uncommon and are occasionally serious. Nausea is common but avitaminosis B, gastrointestinal moniliasis, or even bacterial enteritis (particularly staphylococcal) may occur. Deposition of tetracyclines in bone has been described, particularly in the newborn, after the mother has received tetracyclines in pregnancy. It is sometimes associated with actual hypoplasia of bone, and is probably due to formation of a complex of the drug with calcium salts. Out-dated tetracycline, particularly chlortetracycline that has degraded on storage, can produce an acute adult Fanconi syndrome characterised by proteinuria, glycosuria, acidosis and aminoaciduria. The syndrome is reversible on drug withdrawal. The tetracyclines are also catabolic, increasing muscle breakdown, and may also produce hepatocellular damage and photosensitivity in a few patients. In spite of these serious reactions, tolerance to tetracyclines is generally good.

CHLORAMPHENICOL. — Produced by *Streptomyces Venezuelæ,* chloramphenicol has similarities with the tetracyclines except in two important respects. First, it is highly effective against the typhoid-paratyphoid group of organisms, for which it is still the drug of choice. The second difference is a much higher incidence of serious side effects. Gastrointestinal disturbances are the more common, but fatal agranulocytosis or aplastic anæmia are sufficiently frequent to be disturbing, and they demand restriction in use of the drug to short, single courses of not more than seven to ten days. In infants, particularly if premature, the drug may cause acute circulatory collapse — the "grey syndrome" — owing to immaturity in the infant tissue of enzyme systems responsible for liver conjugation and renal excretion of the drug. Optic atrophy has also been described. Chloramphenicol has a high activity against *Hæmophilus influenzæ* and pertussis, but the danger of toxicity restricts its usefulness in exacerbations of chronic bronchitis or in whooping cough. It is usually given orally, but may be given intravenously. Tissue irritation precludes intramuscular use.

STREPTOMYCIN.—Isolated in 1944 from *Streptomyces griseus,* streptomycin was the first drug found with important activity against *Mycobacterium tuberculosis.* It is one of the three main drugs in the management of tuberculosis and, though it does not cross the blood-brain barrier, it has a unique place in tuberculous meningitis, in which its intrathecal use has considerably reduced the mortality. The compound is poorly absorbed from the gastrointestinal tract, and has to be given intramuscularly. Though it is active against many Gram-positive organisms, its activity is less than that of the penicillins and tetracyclines. However, streptomycin is sometimes used with benzylpenicillin in mixed respiratory-tract infections. Many Gram-negative organisms are susceptible but rapidly develop resistance. Streptomycin is still the drug of choice in tuberculous meningitis, and for tularæmia and plague. Although it is active against *B. proteus, Ps. pyocyanea* and other coliform organisms, rapidly developing resistance limits its use to short courses for urinary infections due to these organisms. Apart from local pain at the site of injection, the main side effect is an important ototoxic property that may rapidly lead to irreversible vestibular ataxia, particularly if renal excretion is impaired. Deafness is also frequent and irreversible, and skin sensitisation is common. Dihydrostreptomycin is less vestibulotoxic but even more ototoxic, and has now no place in therapeutics.

Other antituberculous antibiotics, which are reserved for the treatment of infections resistant to two or all of the standard drugs, include cycloserine, viomycin and kanamycin. CYCLOSERINE, which is taken orally, is derived from *Streptomyces garyphalus,* and has low antituberculous potency and serious toxicity. Its only advantage is that resistance develops comparatively slowly. Toxic reactions include agitation and severe depression. VIOMYCIN, produced by *Streptomyces paniceus,* has to be given intramuscularly, but resistance is again slow to develop. The drug is not only ototoxic but also nephrotoxic, as also are kanamycin and the other polypeptide antibiotics. KANAMYCIN, derived from *Streptomyces kanamyceticus,* is also used intramuscularly, and has a more important place in the treatment of severe *B. proteus* infections than in tuberculosis.

Topical Antibiotics

Of the many other recent antibiotics few have established an important place in therapeutics because their action against previously serious infections has been better taken over by the penicillins and cephalosporins, which have the added advantage of low toxicity.

NEOMYCIN, derived from *Streptomyces fradiæ,* has still a place in sterilisation of the gut, particularly before gastrointestinal surgery or in liver failure. It has a useful rôle also in the treatment of superficial skin infections, and of nasal carriers of penicillin-resistant bacteria, particularly staphylococci, which rarely become resistant to it.

The POLYMYXINS, derived from *B. polymyxa,* are effective in *Ps. pyocyanea* infections of the urinary tract, but are more widely used in topical applications for burns, which are usually secondarily infected by this organism. The polymyxins are frequently used in a spray for sterilising wounds in hospital operating theatres or casualty departments. In the sprays they are often combined with BACITRACIN, originally derived from *B. licheniformis.*

Antifungal Antibiotics

The antifungal antibiotics have an important place in a few selected conditions. The group primarily comprises nystatin, amphotericin B and griseofulvin.

NYSTATIN, produced by *Streptomyces noursei,* is an insoluble antibiotic effective against *Candida albicans.* Since it is not significantly absorbed from the gastrointestinal tract, its main use is for moniliasis of the alimentary tract, mucous membranes and skin. It has a low toxicity, and may be used as a prophylactic against the development of moniliasis during treatment with other antibiotics, particularly tetracyclines. It is useless, however, in systemic moniliasis.

AMPHOTERICIN B, produced by *Streptomyces nodosus,* is insoluble but forms soluble salts. These are still poorly absorbed and are given by daily intravenous infusions, except in fungal meningitis, when they can be given intrathecally. The drug is effective in systemic moniliasis, and numerous mycoses including histoplasmosis, aspergillosis and cryptococcosis. Toxicity, however, is high, and in addition to phlebitis, it may cause anaphylactoid reactions, cardiac arrhythmias, exfoliative dermatitis, acute liver failure, or even irreversible renal damage with nephrocalcinosis. Its clinical usage, therefore, is limited to serious generalised infections in which the risk of these complications is outweighed by the serious prognosis if treatment is not attempted.

GRISEOFULVIN was originally derived from *Penicillium griseofulvum,* and has since been synthesised. Several other penicillia also produce griseofulvin. It is sparingly soluble, heat stable, is absorbed in the duodenum and jejunum and excreted as a metabolite in the urine. Its antifungal activity is primarily against the varieties of trichophyton and microsporum which cause ringworm of the scalp, skin and nails. Toxic reactions are not infrequent but rarely serious. Allergic skin reactions, gastrointestinal disturbances, headache and thirst are the commonest, but granulopenia has been described. There is cross-sensitivity in patients also sensitive to penicillin.

From this *résumé* it may be seen that the antibiotics from sources other than the penicillia still have a most important rôle in the treatment of respiratory-tract infections, peritonitis, the enteric fevers, tuberculosis and several fungal diseases.

Their future rôle may be progressively less vital, but their past and present history is one of major contribution to the welfare of mankind.

HARNESSING THE DRUG TO THE PATIENT'S NEED

Pharmaceutical Aspects of Antibiotics

Problems that tax the formulator's ingenuity

K. A. LEES (Head of the pharmaceutical research and development department, Glaxo Laboratories, Ltd.)

ANTIBIOTICS include compounds of widely differing chemical structure and their forms of presentation are as diverse as one is likely to meet in any formulation laboratory. In many instances the formulator may be asked to do his work even before the structure has been fully elucidated. To approach one's colleagues in organic chemistry for advice as to the potential lability of the molecule, or its sensitivity to the environments of *p*H value, oxidation, heavy metals, etc., is to invite a polite acknowledgment of the compliment, but the advice offered will not be of the same practical use as that obtainable for a compound that has been the subject of a programme of synthesis in the chemists' laboratories. The formulator of antibiotics is also familiar with the situation in which microbiological assay is the only valid, even though imprecise, method of measuring potency, so that he finds his stability studies bedevilled by results so variable as to be positively discouraging. It may also be revealed in the course of time that the " antibiotic " consists of not one compound but a number of closely similar compounds, separable perhaps only by sophisticated chromatography, each component having its own individual spectrum of activity and stability problems. Even today, seventeen years after its discovery, supplies of neomycin are a mixture of two or more related antibiotic components.

Similar Characteristics

Although penicillins seem to fall readily into two main groups, namely the natural penicillins embracing penicillin G and V, and the semi-synthetic penicillins, of which phenethicillin, propicillin, cloxacillin and ampicillin are probably the most important, this classification holds little significance for the formulator. The same broad considerations of stability apply to all penicillins; none of them is sufficiently stable for aqueous solutions to have a practicable shelf life. It is, however, possible to adjust potency losses to an acceptable proportion of the total penicillin present by the device of reducing solubility to the point at which the proportion of the dose in the form of insoluble penicillin greatly exceeds that in solution.

All penicillins are unstable at low *p*H values, but some of the newer penicillins are much less so. Ampicillin is outstanding in this respect, being 200 times as stable as penicillin G at *p*H 1·3. On the other hand methicillin is somewhat less stable than penicillin G at acid *p*H values, and this is reflected in the slightly higher value required for optimum stability (*p*H 6·8 rather than the *p*H 6·5 required for penicillin G). Degradation of penicillin in solution creates additional acidity, and buffers are distinctly advantageous in preserving the potency of all aqueous formulations. There are in the literature, several claims for specific stabilisers for penicillin, but almost always the claims for improved stability have been made for unbuffered solutions, so that the benefits observed could be attributed simply to a buffering effect of the stabilisers.

The stability of dry dosage forms of penicillin depends upon the moisture content of the penicillin powder mixture. To achieve the shelf life required for a commercial product, attention must be paid to moisture content during manufacture and also to the design of the pack, to ensure that the initially acceptable moisture content is maintained throughout the life of the product. The formulator will wisely consider the vapour pressure characteristics and moisture content of all ingredients in the dry penicillin mixture so as to minimise the tendency for the mixture as a whole to attract moisture.

Importance of Purity

The formulator must not concentrate solely on the problems of potency stability. All penicillins on degradation develop characteristic disagreeable odours, and the presence of only a trace of breakdown products can render a batch of tablets unacceptable long before its loss of potency is detectable. Successful formulation requires that the penicillin shall be of good quality, not merely of Pharmacopœial standard but free of traces of impurity entrained from the extraction and crystallisation processes. It may even be advisable to institute a simple accelerated stability test to reveal the potential odour and colour development of any particular batch of penicillin. The formulator working in a company manufacturing antibiotics undoubtedly has an advantage in this context, for he can rely on his colleagues to develop and adapt the characteristics of the antibiotics to suit the formulation whenever possible. Despite the most careful attention to the detail of the formula, secondary production techniques and relevant standards, a substandard batch of penicillin can quickly result in a product that reflects little credit on the manufacturer.

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Keeping moisture content down in the issued packs of penicillin products calls for a considerable programme to evaluate the pack in the laboratory and later in production. Dry penicillin mixtures for the pharmacist to dispense as syrups contain caster sugar with buffering and flavouring agents. The proportion of penicillin to the other ingredients is low; hence it is important to pay attention to the thorough drying of ancillary ingredients whenever necessary. The packs for penicillin granules normally have a polythene conical shive under the screw cap closing the bottle. Polythene has excellent resilience and it seats intimately on the contours of the rim of the bottle neck, but it is vital to apply the screw cap holding the polythene shive in place with a standard predetermined torque of application. By that means inadequate seals arising from excessive distortion or incomplete contact of the shive are avoided. Automatic capping machines may be fitted with an adjustable clutch, which will slip at the required application torque. Finally a plastic overseal is normally shrunk over the screw cap to hold cap and shive at the original torque setting for the life of the product.

MOISTURE PERMEABILITY OF CLOSURES ON PENICILLIN G GRANULE PACK

Closure (with Bakelite screw cap where required)	Mean weight gain per week of silica gel in 100-mil bottle (mgm.). Temperature—fluctuating 25-37°C. Relative humidity—75 per cent.
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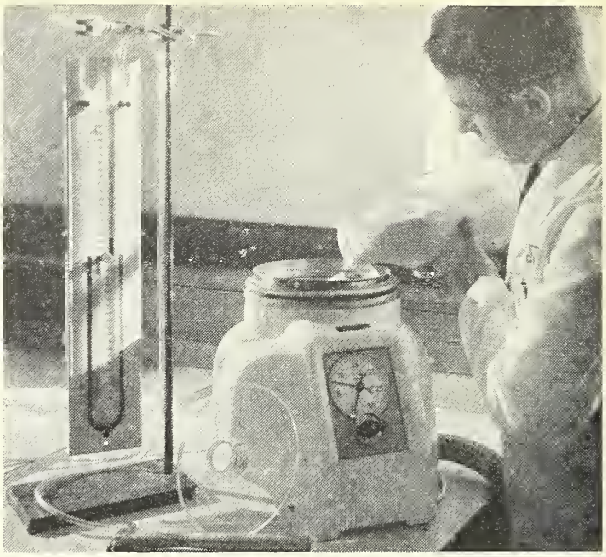
Polythene shive	1·1
Cork shive (not waxed)	8·3
Roll on seal—polythene faced cork wad	8·4
Red rubber wad—not vulcanised	12·0
Resistol faced cork wad	61·2

Properties of the Tetracyclines

The tetracyclines are used in a wide range of topical, oral and parenteral products. In spite of their great value and success as oral broad-spectrum antibiotics, there is still room for improvement in the efficiency of their absorption from the gut. That defect, their bitter and sometimes nauseous taste, and their low solubility at physiological *p*H values, have received considerable attention since the antibiotics were first introduced. The formulator must regard the tetracyclines as highly reactive compounds, readily complexing with salicylates, *p*-hydroxybenzoates, saccharin, phosphates, divalent metal cations, and numerous other substances likely to be used unwittingly in formulations by the pharmacist. One cannot assume that such complexes have the same absorption and activity characteristics as the parent tetracycline. Indeed the phosphate complex, or a simple mixture with sodium hexametaphosphate, greatly improves the rate and efficiency of absorption of the antibiotic. An enterprising attempt to overcome the bitter taste of tetracycline has been made by forming a complex with cyclohexylsulphamic acid, which is claimed to result in an antibiotic with a sweet taste.

Modifications to the tetracycline molecule have led to the introduction of demethyltetracycline with enhanced acid and alkali stability. From that compound was developed pyrrolidinomethyltetracycline with greater solubility in the physiological *p*H range, resulting in less pain and irritation at the injection site. However, administration by deep intramuscular injection only is still recommended.

Neomycin and streptomycin have many properties in common. Their sulphates readily dissolve in water to form thick syrupy saturated solutions (a property that leads to difficulties for the formulator). For streptomycin the solubility rate is greatly influenced by physical form. In injectable preparations, such as dry powder mixtures with sodium penicillin, there is a tendency for the powder to " ball up " when the solvent is added to make up the injection for use. The physical characteristics of both the streptomycin and water-soluble penicillin powder and also the blending techniques require special attention if acceptable solution rates are to be maintained. Tablets of neomycin sulphate dissolve rather than disintegrate. Disintegrating agents, such as starch or alginic acid, have limited value in neomycin sulphate tablets. The saturated syrupy solution at the solid/liquid interface on the periphery of the dissolving tablet prevents water from penetrating the interstices, and hence the disintegrants are unable to function in the normal way.



A mechanical air sieve being loaded to search for oversize particles in procaine penicillin for injectable suspensions.

Streptomycin and neomycin sulphates are essentially stable in solution, the optimum *p*H value for stability being about 5·0. Both antibiotics have a tendency to discolour in solution, and although this need carry no implication of potency loss or increase in toxicity, it is wise to minimise it by incorporating reducing agents such as bisulphite, metabisulphite or ascorbic acid together with chelating agents (which potentiate the action of these reducing agents). Being widely used topically and to some extent orally, neomycin must often be formulated with other substances. It is important to bear in mind its readiness to form insoluble salts with large anions such as laurylsulphate, barbiturates, acid dyes and most mercural antiseptics. It does not necessarily follow, however, that incompatibilities manifest at the concentration of antibiotic present in the product will interfere with the antibiotic's activity at concentrations near those at which it is effective.

Antibiotics will continue to offer a challenge to the formulator. Apart from the more obvious or well known stability problems associated with them, questions of stability in relation to crystalline form can arise. Some of the new antibiotics are known to possess these properties. The conclusion must be that the formulation of antibiotics to provide products satisfactory in every respect calls for expert knowledge, first class facilities and considerable experience.

Formulation of intramammary infusions containing antibiotics is discussed by Mr. Lees in the main part of this issue of THE CHEMIST AND DRUGGIST.

The photographs that make up the title page of the supplement show (left) inoculation of surface-culture bottles for penicillin production in 1941 *(Glaxo Laboratories, Ltd.) and (right) the operating floor of a penicillin fermentation plant in use today (Beecham Research Laboratories).*

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